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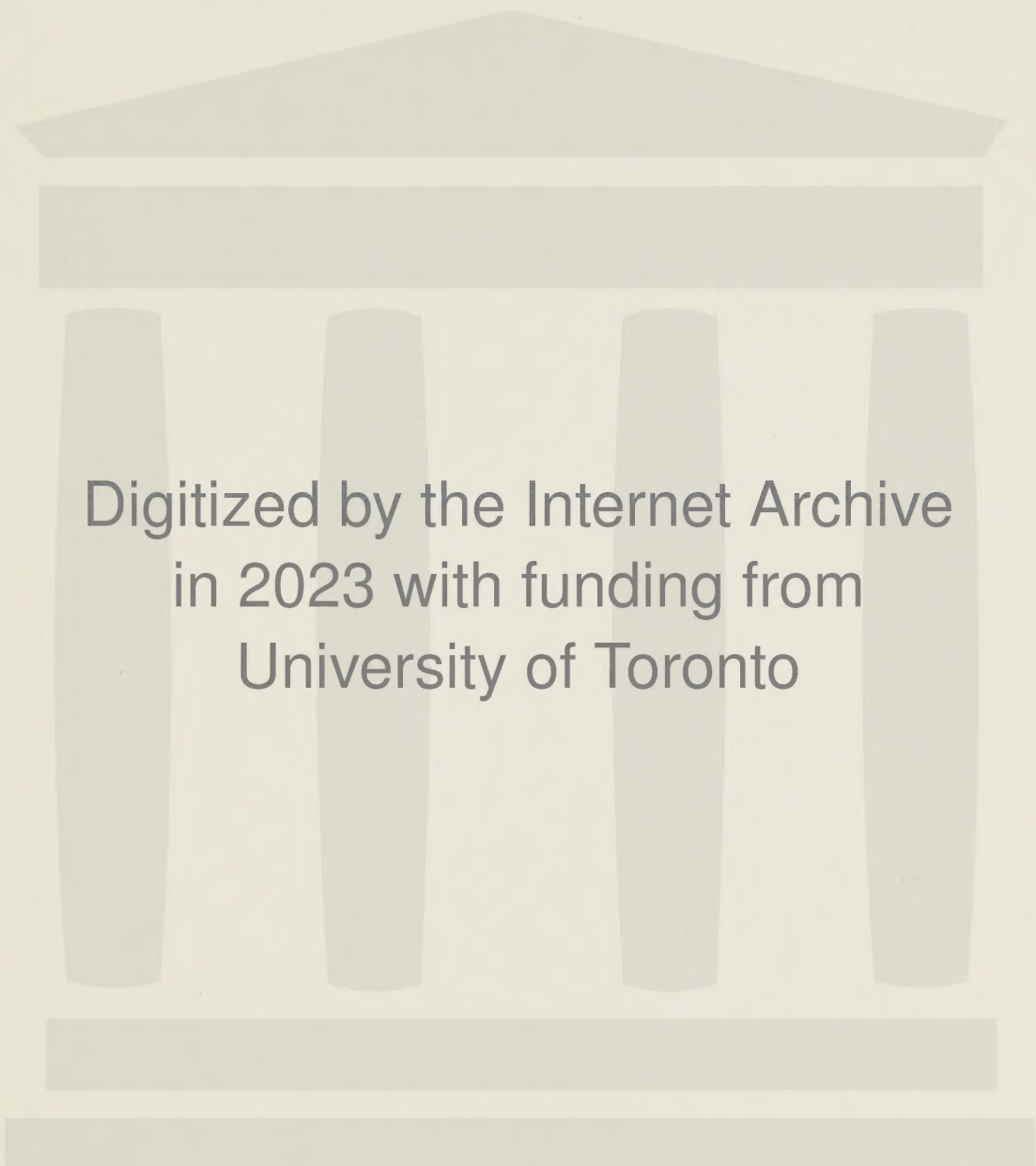
ROYAL COMMISSION ON HEALTH SERVICES

PHARMACIST MANPOWER IN CANADA

THOMAS M. ROSS

1965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PHARMACIST MANPOWER IN CANADA

Thomas M. Ross

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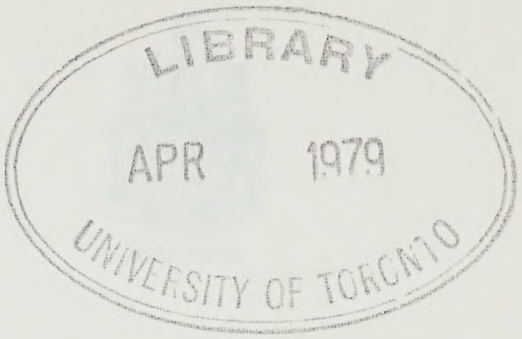

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PREFACE

The profession of pharmacy in Canada has embarked upon a voyage into an era of dynamic change and reappraisal of its role in the complexities encountered in the provision of the highest attainable standard of health care for the citizens of our country. Many internal and external forces have combined to render such a re-evaluation necessary, not the least of which has been the dramatic progress recorded, in recent years, in the development of highly specialized medicinal products requiring the formulation facilities of a highly specialized pharmaceutical industry. As a result, the modern pharmacist is called upon to utilize his skill in combining and compounding medicinal agents less and less. However, the care and knowledge required in handling, dispensing and distributing today's more sophisticated drugs has increased manyfold.

Diverse activities have been predicted for the pharmacist of the future by many authorities in the field. These do not particularly concern us in this study. However, orderly progress toward any of these goals will require careful, systematic planning. An integral part of this planning should involve analysis of the manpower resources available to the profession for utilization in whatever manner chosen. For this reason it is hoped that this study will prove invaluable to both the Royal Commission on Health Services, under whose auspices it was carried out, and to those on whom the responsibility for charting the future of pharmacy as a profession will rest.

To this end, such facts as were obtainable and looked upon as essential in the field of pharmacist manpower in Canada were gathered and analysed. But this has not been without difficulty. Available statistics in this field were extremely limited. Much of the required information had to be sought through the use of surveys.

As previously stated, much of this study has been difficult. It would have been completely impossible without the complete and willing co-operation of the profession of pharmacy itself and of other individuals within and outside the pharmacy profession complex. To these persons, too numerous to mention separately, much of the credit for what has been accomplished must be directed.

As Director of this project, my special indebtedness must be expressed to the Deans of all Canadian Pharmacy Schools, to the Registrars of all the Provincial Statutory Licensing Bodies in Pharmacy together with their staffs, to the Canadian Pharmaceutical Manufacturers' Association and to the Canadian Hospital Association.

To the Secretary-Manager of the Canadian Pharmaceutical Association, John C. Turnbull, for his counsel, patience and advice, and to the Association which he represents for its financial and administrative assistance to this study, I express my deep gratitude.

To the Research Director of the Royal Commission on Health Services, Professor Bernard R. Blishen, whose problems were similar to my own but multiplied many times through the diversity of co-ordination of numerous projects, I am indebted for his direction and advice in the course of this study.

Finally, it is my pleasure to express my appreciation to the Royal Commission on Health Services itself for making such a study as this possible.

1964

Thomas M. Ross
B.Sc.Phm., M.B.A.

CHAPTER 1

INTRODUCTION

PROBLEM, SCOPE AND METHOD OF STUDY

The Order in Council establishing the Royal Commission on Health Services (P.C. 1961-883), in designating the terms of reference of the Commission, stated in part:

"The Commission has been appointed to inquire into and report upon:

.....

(d) The present and future requirements of personnel to provide health services."

The importance of studying personnel requirements in the health disciplines cannot be over-emphasized. Each succeeding year sees research and technological change provide health personnel with newer and more efficient tools and facilities. In most lines of human endeavour, more efficient techniques require a higher degree of skill in those utilizing them but, at the same time, increase the capacity of the individual worker. Although continuing dramatic advances in the health sciences do necessitate higher skills in associated personnel, the capacity of individual workers does not increase proportionately. All aspects of the provision of health care are personal services. The complex human relationships between the provider and recipient of each service dictate that such services cannot be mass-produced. While it is true that some technical achievement has produced limited capacity improvement, such as those that have led to a shortened period of illness or hospital stay, it is equally true that, because of the character of the services involved, the capacity of the individual health worker to service a greater number of persons has not been dramatically demonstrated. In effect, research and technological change in the field of health care have contributed more to increasing the efficiency of each service than they have to augmenting the capacity of skilled personnel.

Manpower in the health disciplines will always remain the most critical component in the provision of adequate health care to the Canadian public. For it is through the medium of skilled personnel that augment ted benefits developed by the supporting sciences are made available in each community.

Since this study has pharmacist manpower as its primary concern, it may be well to consider, at this point, some special reasons which make a study in this area significant.

A few years ago, the conviction persisted within the profession that there were far too few pharmacists. This view was supported by the fact that a general demand existed within all branches of the profession for personnel trained in the discipline of pharmacy. Pharmaceutical manufacturers, hospitals, government departments and the armed forces could not procure the number of pharmacists they required, and many community pharmacy proprietors found it necessary to work long hours because of a deficiency of professional staff. Shortages seemed to exist in all branches of the profession.

Quite recently, authorities have begun to suspect that the apparent deficiency of professional personnel in community pharmacy is, to a degree at least, an artificial one. Notice has been directed to the large proportion of pharmacy practitioners who enter the field of community pharmacy and, eventually at least, tend towards opening their own stores, the greatest number of which have been located in urban areas. This tendency to community practice proprietorship is understandable. A successful community pharmacy offers financial rewards superior to those obtainable in other professional branches and, in addition, offers the opportunity of the economic independence of the self-employed.

However, the proliferation of pharmacies has led to less than optimum utilization of the professional services and facilities offered by each. This may be specially true in urban areas and has led many to believe that rather than a deficiency of professional manpower in this branch of pharmacy, there are simply too many outlets, many of which are without adequate skilled personnel.

Some proponents of this theory believe that this seeming mis-allocation of practitioners in community pharmacy, if by some means corrected, would not only leave sufficient professional personnel in this branch of pharmacy, but would also free sufficient professional manpower to fill many of the needs of the other branches of the profession where a real deficiency exists. In short, the opinion has been expressed by some that a mis-allocation of professional manpower resources exists not only within community pharmacy, but also between the various branches of the profession.

These problems have served to make an assessment of past trends and present status of pharmacist manpower imperative. Based on the consideration, both of actual demand and adequacy, this study assesses pharmacist manpower, and on the basis of Canadian economic and population forecasts it attempts some limited predictions as to future requirements for this type of personnel.

The study has been organized into four basic areas of investigation. The first of these is concerned with the supply of pharmacist manpower in Canada. Here, historical trends in supply are examined and an attempt is made to evaluate the relative importance of elements affecting supply. In addition, some attention is

directed toward evaluating the economic equation which faces the prospective student in pharmacy, whereby he must resolve the cost of a three or four year university education with the financial benefits which he expects to realize after graduation.

The second portion of the study devotes itself first to the distribution of pharmacists in Canada. In this context, geographical and professional distribution, as well as the mobility of pharmacists in both of these areas, are viewed and correlated with personal considerations such as age, sex and years of practice. This section also considers certain characteristics of current pharmacy practitioners such as academic and licensing qualifications and levels of remuneration.

In the third section of the study, demand for the employment of pharmacists is studied. After a consideration of socio-economic forces which have exerted an influence on demand, the section analyses the demand for manpower in each branch of the profession.

The fourth and final section of the study attempts to equate supply and demand for pharmacist manpower. It is here that the adequacy of pharmacist manpower in relation to population is discussed.

The study terminates with a discussion of conclusions arising from all areas of study.

Method of Study

The definition of the term "Pharmacist" was perhaps the first problem encountered in the study. Professional registration or licensing in Canada is the responsibility of ten completely separate and distinct provincial statutory bodies which are charged with the administration of the Pharmacy Act, or its equivalent, in their respective provinces. Such licensing is granted on the basis of differing combinations of academic qualification and internship from one province to another. However, in general, professional licensing is required of pharmacists only in the community practice branch of the profession.[1] Since licensing is not a requirement of the practice of pharmacy in its other phases, many practitioners pursue their endeavours in these fields without it. Indeed, to many, licensing is not available because, although academically qualified , they have never undertaken a formal internship programme.

For this reason, it was decided to discard the theory that the term "Pharmacist" should only be applied to those practitioners possessing professional licensing. For purposes of this study, then, ''Pharmacist'' means any practitioner with academic qualifications in pharmacy. The term "Licensed Pharmacist" is used throughout to refer to the somewhat more restricted classification of those possessing professional licenses in pharmacy in a province of Canada.

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[1]This general rule does not always apply. For example, the Province of Saskatchewan insists that all hospital pharmacists be fully licensed.

The definition of "Pharmacist" on the basis of academic qualification presented an additional difficulty in respect to those persons who received their academic training in this discipline in a country other than Canada. In order to preserve the integrity of the definition, it was applied to those immigrants to this country who possessed academic qualification acceptable to the licensing bodies in pharmacy in Canada. In effect, those immigrants possessing academic qualification at least equal to Canadian standards were accepted within the definition of "Pharmacist".

Early in the design of this study, a notable lack of statistical information became apparent. Pharmacist manpower in Canada was a statistical "unknown". There had been no survey of pharmacists in Canada such as those carried out with respect to physicians by the Department of National Health and Welfare in 1947 and 1948. There had been no surveys of pharmacist manpower carried out in Canada similar to those conducted, from time to time, by the Public Health Service in the United States of America.

Some data were available, it is true, in the files of the provincial licensing bodies in pharmacy, but they pertained only to licensed pharmacists and, although sufficient for the purposes of the licensing bodies, were far from complete for the purpose of this study. It was, therefore, necessary to undertake a survey as part of the present study. The survey became known as "The Pharmacist Survey - 1962".

Since no complete listing of pharmacy practitioners in Canada existed, the first steps in the survey were devoted to the development of as complete a list as possible in order that questionnaires could be circulated to a maximum number of members of the profession. The basic list used was the membership list of the Canadian Pharmaceutical Association which contained names and addresses of all licensed pharmacists. With the realization that a considerable number of practitioners who were not licensed would not be represented on this list, and realizing, also, that these unlicensed persons would be employed in areas of the profession other than community practice, supplementary lists of those in such other pursuits were gathered and co-ordinated with the basic list.

Questionnaires for the identification of employed pharmacist personnel were directed to all hospitals in Canada which employed at least one pharmacist, through the co-operation of the Canadian Hospital Association. These questionnaires, which also solicited staffing forecasts from the hospital chief pharmacists to whom they were directed, received the endorsement of the Canadian Society of Hospital Pharmacists and achieved a response rate of 89.2 per cent. Of the 315 hospitals to which the questionnaire was directed, only 34 did not reply. Copies of the English and French language versions of the questionnaire, with a provincial breakdown of the replies received, appear as Appendix "A" to this study. The names of the chief pharmacists of those hospitals failing to reply were added to the list for purposes of the later "Pharmacist Survey".

Pharmacists employed in the pharmaceutical industry were identified by the Canadian Pharmaceutical Manufacturers' Association at the request of the Royal

Commission. Those on the staffs of universities or in the pursuit of higher academic achievement were identified through the co-operation of the Deans or Directors of Canada's eight Faculties of Schools of Pharmacy.

Provincial Health Ministers supplied the names of pharmacist personnel of their respective provincial governments. Lists of pharmacists were received from the Federal Government Departments of National Health and Welfare, Veterans Affairs and National Defence.

All of these supplementary lists were integrated with the basic list of licensed pharmacists and the resultant master listing, totalling approximately 11,000 names, was used as the basis of circulation of questionnaires for the Pharmacist Survey. It must be emphasized that the developed list was not a complete list of pharmacists in Canada. Most of the lists used in its compilation were, to a degree at least, incomplete and no attempt was made to trace individual pharmacists who had either retired or left the profession for other endeavours. The preparation of the master list was not intended to be a census of pharmaceutical manpower in the various branches of the profession. This would have placed demand on resources far in excess of those that were available to this study. The effort was directed toward providing as wide a distribution of questionnaires for the later Pharmacist Survey as possible.

Questionnaires were developed and printed in the English and French languages and sent to all pharmacists on the master list, accompanied by a letter from the Director of Research of the Royal Commission on Health Services which urged the co-operation of individual pharmacists. Some time later, another follow-up letter from the Research Director urged co-operation from those who failed to reply to the original mailing.

The method used produced 5,672 replies which could be tabulated. Although this 'sample' was not statistically designed, its size ensures that the trends discerned in this group will be applicable to the profession of pharmacy in Canada as a whole with only minimal error. Samples of the original questionnaire forms and some characteristics of the sample obtained appear as Appendix "B" to this study.

As noted earlier, the files of the provincial licensing bodies in pharmacy which were opened for this study contained considerable information. It is with extreme regret that it must be noted that repeated attempts to gain access to information contained in the files of the pharmacy licensing body in the Province of Quebec were unsuccessful. In as many cases as possible, certain information pertaining to Quebec pharmacists has been obtained from the files of the Canadian Pharmaceutical Association. However, this method has compromised both the extent and the accuracy of the information obtained on pharmacists in that province.

Certain other data have been obtained from sources in the Dominion Bureau of Statistics and from other studies conducted by the Royal Commission on Health Services.

The limitations on the statistics presented herein are evident in at least two ways. First, certain statistics are not available. For example, no reliable census of pharmacy manpower, other than for licensed pharmacists, is available either for the past or present. A second limitation is that those data available from one source are not always directly comparable to those from another. An illustration of this is the difficulty encountered, due to differing recording methods, in extracting comparable information from the files of the provincial licensing bodies in pharmacy. Other examples of either type of statistical limitation are noted throughout the study, but it is believed that despite these statistical gaps and inconsistencies no unfounded conclusions have been drawn.

The Director of this study, himself, deploring reports which are couched in vague generalities which, as a result, lend themselves to variable interpretation, has preferred to produce numerical estimates from time to time throughout this study. The future, as it becomes history, will either disprove or substantiate these predictions, and the current reader is warned that they are but the opinion of one man, based on the data that were available to him.

CHAPTER 2

SUPPLY OF PHARMACISTS IN CANADA

A. HISTORICAL TRENDS IN THE SUPPLY OF PHARMACISTS

As already stated, no reliable census of total pharmacist manpower exists in this country. The files of provincial licensing bodies enable us, however, to provide accurate yearly counts of such things as licensed pharmacists, pharmacies, and women in pharmacy.

Table 1 provides a census of licensed pharmacist manpower, by provinces, from 1955 to 1962. *Table 2* outlines the number of community or retail pharmacies for the same period. Canadian population figures, by province, appear as *Table 3* for the years 1955 to 1962.

In *Table 4,* population has been related to numbers of licensed pharmacists to produce figures showing the population per licensed pharmacist for the years 1955 to 1962. Over this period of time, it is interesting to note that the ratio for the country as a whole has remained remarkably constant with 2,070 persons per licenced pharmacist in 1955 and 2,026 in 1962. In this period, the growth in the number of pharmacists' licenses issued has been greater proportionately than population increase in Alberta, Manitoba, Quebec and Newfoundland giving a decreased number of persons per pharmacist in these provinces at the end of the period. The growth in the number of pharmacists' licenses issued in the other provinces has been proportionately smaller than the population growth over the period and the number of persons per pharmacy has thus increased.

Table 5 outlines the number of persons per retail pharmacy over the period from 1955 to 1962. Although, as has been shown, the number of licensed pharmacists kept pace with the growth in population over the period, it is evident from this table that the growth in the number of pharmacies did not keep pace. The number of persons per pharmacy has increased every year in the period from 3,317 in 1955 to 3,698 in 1962. This represents a growth of 11.5 per cent in the number of persons per pharmacy in the eight year period. This trend has taken place during a period of relative economic prosperity when an opposite result might have been expected. It must be assumed that the pharmacies operating at the end of this period were generally more prosperous than would have been the general rule in 1955. Because the growth in pharmacist licenses increased at a more rapid pace, it is also safe to assume that

the pharmacies operating in 1962 were generally better staffed with pharmacists than were their 1955 counterparts.

In the provincial breakdown, all provinces with the exception of Newfoundland experienced this growth in population per pharmacy. The trend in Newfoundland has been the reverse over the period, but the ratio of population to pharmacy is so high in that province that it can be assumed that this trend has made the services of a pharmacy available in centres which previously did not have them.

Female pharmacists are gradually growing in importance in relation to the total licensed pharmacist workforce. *Table 6* presents counts, by provinces, of female licensed pharmacists, while *Table* 7 gives the percentage of total pharmacy licenses held by females, by provinces, for the years of 1955 to 1962.

While women accounted for only 8.0 per cent of the total licensed pharmacist workforce in 1955, this proportion had increased to 11.0 per cent by 1962. Alberta especially attracts females to the profession of pharmacy. Already 11.2 per cent of total licensed pharmacists in that province in 1955, this proportion rose at over twice the national rate to 18.7 per cent in 1962.

The practice of pharmacy has become remarkably more attractive to women in the last decade. This point will be illustrated further in our consideration of enrolment in Canadian schools of pharmacy in the next section of this chapter.

TABLE 1

LICENSED PHARMACISTS

Province	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	964	994	1,004	1,047	1,066	1,106	1,132	1,164
Alberta	582	609	627	641	683	708	725	749
Saskatchewan	522	526	518	522	523	540	551	550
Manitoba	522	537	564	564	569	586	592	609
Ontario	3,541	3,642	3,730	3,772	3,834	3,923	3,976	4,027
Quebec[1]	927	1,011	1,004	1,461	1,491	1,519	1,507	1,521
New Brunswick	173	175	175	178	169	172	170	165
Nova Scotia	230	238	231	231	231	229	227	233
Prince Edward Island	35	38	36	36	36	37	35	36
Newfoundland	86	84	93	101	101	97	96	107
Yukon and N.W.T.[2]	2	2	2	2	2	2	3	5
CANADA	7,584	7,856	7,984	8,555	8,705	8,919	9,014	9,166

[1]Estimated from files of the Canadian Pharmaceutical Association.

[2]Yukon and North West Territories maintain no separate licensing body. Pharmacists represented by these figures maintain an active license with one of the provincial bodies.

Source: Files of provincial licensing bodies in pharmacy.

TABLE 2

COMMUNITY PHARMACIES

Province	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	452	444	449	454	450	472	486	484
Alberta	358	369	378	398	423	433	436	448
Saskatchewan	328	328	332	326	325	331	332	327
Manitoba	311	316	324	318	326	331	323	318
Ontario	1,959	1,959	1,946	1,955	1,949	1,957	1,934	1,907
Quebec[1]	970	970	890	980	1,040	1,040	1,040	1,152
New Brunswick	103	106	103	102	101	105	106	106
Nova Scotia	186	189	190	185	187	188	184	188
Prince Edward Island	24	26	26	25	26	25	26	25
Newfoundland	39	48	49	53	56	57	61	65
Yukon and N.W.T.	2	2	2	2	2	2	2	2
CANADA	4,732	4,757	4,689	4,798	4,895	4,941	4,930	5,022

[1]From figures quoted yearly by the Quebec College of Pharmacists to the Annual Survey of Retail Pharmacy of the Canadian Pharmaceutical Association.

Source: Files of provincial licensing bodies in pharmacy.

TABLE 3

POPULATION
(in thousands)

Province	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	1,342	1,398	1,482	1,538	1,567	1,602	1,629	1,659
Alberta	1,091	1,123	1,164	1,206	1,248	1,291	1,332	1,370
Saskatchewan	878	881	880	891	907	915	925	930
Manitoba	839	850	862	875	891	906	922	935
Ontario	5,266	5,405	5,636	5,821	5,969	6,111	6,236	6,342
Quebec	4,517	4,628	4,769	4,904	5,024	5,142	5,259	5,366
New Brunswick	547	555	562	571	582	589	598	607
Nova Scotia	683	695	701	709	719	727	737	746
Prince Edward Island	100	99	99	100	101	103	105	106
Newfoundland	406	415	424	432	441	448	458	470
Yukon and N.W.T.	29	32	31	33	34	36	37	39
CANADA	15,698	16,081	16,610	17,080	17,483	17,870	18,238	18,570

Source: Dominion Bureau of Statistics — Census for years 1956 and 1961 and estimates for intercensal years.

TABLE 4

POPULATION – LICENSED PHARMACIST RATIOS

Province	Population per Licensed Pharmacist							
	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	1,392	1,406	1,476	1,469	1,470	1,448	1,439	1,425
Alberta	1,875	1,844	1,856	1,881	1,827	1,823	1,837	1,829
Saskatchewan	1,682	1,675	1,699	1,707	1,734	1,694	1,679	1,691
Manitoba	1,607	1,583	1,528	1,551	1,566	1,546	1,557	1,535
Ontario	1,487	1,484	1,511	1,300	1,557	1,558	1,568	1,575
Quebec	4,873	4,578	4,750	3,357	3,370	3,385	3,490	3,530
New Brunswick	3,162	3,171	3,211	3,208	3,444	3,424	3,518	3,679
Nova Scotia	2,970	2,920	3,035	3,069	3,113	3,175	3,247	3,202
Prince Edward Island	2,857	2,605	2,750	2,778	2,806	2,784	3,000	2,944
Newfoundland	4,721	4,940	4,559	4,277	4,366	4,619	4,771	4,393
Yukon and N.W.T.	14,500	16,000	15,500	16,500	17,000	18,000	12,333	7,800
CANADA	2,070	2,047	2,080	1,996	2,008	2,004	2,023	2,026

TABLE 5

POPULATION – COMMUNITY PHARMACY RATIOS

Province	Population per Community Pharmacy							
	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	2,969	3,149	3,301	3,388	3,407	3,394	3,352	3,428
Alberta	3,048	3,043	3,079	3,030	2,950	2,982	3,055	3,058
Saskatchewan	2,677	2,686	2,651	2,733	2,791	2,764	2,786	2,844
Manitoba	2,698	2,690	2,660	2,752	2,733	2,737	2,854	2,940
Ontario	2,688	2,759	2,896	2,977	3,063	3,123	3,224	3,326
Quebec	4,657	4,771	5,358	5,004	4,831	4,944	5,057	4,658
New Brunswick	5,311	5,236	5,456	5,598	5,762	5,610	5,642	5,726
Nova Scotia	3,672	3,677	3,689	3,832	3,845	3,867	4,005	3,968
Prince Edward Island	4,167	3,808	3,808	4,000	3,885	4,120	4,038	4,240
Newfoundland	10,410	8,646	8,653	8,151	7,875	7,860	7,508	7,231
Yukon and N.W.T.	14,500	16,000	15,500	16,500	17,000	18,000	18,500	19,500
CANADA	3,317	3,380	3,542	3,560	3,572	3,617	3,699	3,698

TABLE 6

NUMBER OF FEMALE LICENSED PHARMACISTS

Province	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	90	92	92	100	100	107	114	135
Alberta	65	68	79	81	95	105	115	140
Saskatchewan	40	37	45	32	42	53	55	60
Manitoba	26	27	30	31	32	30	35	41
Ontario	272	279	286	300	322	354	374	418
Quebec	not available							
New Brunswick	12	10	9	11	12	12	12	9
Nova Scotia	20	19	18	20	17	21	19	27
Prince Edward Island	4	4	3	3	4	4	4	4
Newfoundland	4	5	6	6	7	5	5	5
Yukon and N.W.T.	1	1	1	1	1	1	1	1
CANADA (except Quebec)	534	542	569	585	632	692	734	840

Source: Files of provincial licensing bodies in pharmacy.

TABLE 7

PERCENTAGE OF TOTAL PHARMACY LICENSES HELD BY FEMALES

Province	1955	1956	1957	1958	1959	1960	1961	1962
British Columbia	9.3	9.3	9.2	9.6	9.4	9.7	10.1	11.6
Alberta	11.2	11.2	12.6	12.6	13.9	14.8	15.9	18.7
Saskatchewan	7.7	7.0	8.7	5.2	8.0	9.8	10.0	10.9
Manitoba	5.0	5.0	5.6	5.7	5.7	5.1	5.9	6.7
Ontario	7.7	7.7	7.7	8.0	8.4	9.0	9.4	10.4
Quebec	not available							
New Brunswick	6.9	5.7	5.1	6.2	7.1	7.0	7.1	5.5
Nova Scotia	8.7	8.0	7.8	8.7	7.4	9.2	8.4	11.6
Prince Edward Island	11.4	10.5	8.3	8.3	11.1	10.8	11.4	11.1
Newfoundland	4.7	6.0	6.5	5.9	6.9	5.2	5.2	4.7
Yukon and N.W.T.	50.0	50.0	50.0	50.0	50.0	50.0	33.3	20.0
CANADA (except Quebec)	8.0	7.9	8.2	8.2	8.8	9.4	9.8	11.0

B. CANADIAN SCHOOLS OF PHARMACY AS A SOURCE OF SUPPLY

As would be expected, Canadian faculties and schools of pharmacy are by far the most important source of supply of pharmacy manpower in Canada.

The total enrolment in these facilities, as described in *Table 8*, has not followed any definite pattern since the 1947-1948 school year. This may be attributed to a number of factors. First, ex-service personnel swelled enrolments in the early portion of this period. Indeed, most, if not all, Canadian pharmacy educational facilities were quite inadequate and understaffed for the volume of enrolment in the earliest

part of this period. Throughout this period, the length and scope of courses in pharmacy were constantly changing with the result that many faculties were administering two courses of different lengths concurrently. This factor swelled total registration over the period of complete change-over since the backlog of applicants from earlier years, many of whom had served a considerable portion of their required internship for retail practice while waiting for admission to university, had to be given the opportunity of taking the shorter course which was in effect as the time of their original application. This factor is dramatically illustrated in the case of enrolments in the University of Toronto. Although a four-year course in pharmacy was instituted here in the year of 1949-1950, the previous two-year course was offered concurrently for those who had been waiting to attend university. Total enrolments, while both courses were offered, grew steadily to the year 1952-1953 which saw the last large class of those taking the two-year course graduated. Then total enrolment in the next year, 1953-1954, dropped dramatically to 59 per cent of what it had been a year earlier. *In recent years, and continuing at the present time, there has been a dramatic expansion in the facilities of pharmacy faculties generally.* During 1962, of the eight pharmacy schools in Canada, two were housed in new and larger quarters, two had new facilities under construction, one had moved to larger, if not new, quarters, and a sixth had enlarged facilities in the planning stage. Rising total enrolments over the last four years are both a result and a stimulus to such expansion. All of these factors make it difficult to ascertain any trend in past total enrolment. However, the increasing trend in enrolment in the past four years, in the absence of veteran enrolment, and in a period of stability of pharmacy courses, suggests that the current expansion of facilities is well planned and that pharmacy in Canada is currently in a period of expanding enrolment.

Table 9 compares undergraduate pharmacy enrolment with total undergraduate university enrolment in Canada, and *Table 10* compares pharmacy undergraduate enrolment with total undergraduate enrolment in those institutions which house pharmacy facilities. By both methods of comparison, it will be noted that pharmacy enrolment increased at a rate greater than either total university enrolment or total enrolment of universities housing pharmacy facilities in the early years of the period under review and reached a peak in 1952-1953 when pharmacy enrolment was 2.42 per cent of total university enrolment and 4.2 per cent of the enrolment of the universities containing pharmacy facilities. From that year until the present time, pharmacy enrolment has declined in relation to the other two. We may conclude that the longer modern courses in pharmacy do not have the attraction for prospective students that the older courses did. At the same time, the schools of pharmacy, with the implementation of their longer and more comprehensive courses, were unable to handle the same volume of undergraduate enrolment.

The last four years have seen a considerable increase in the first year undergraduate enrolment of Canadian schools of pharmacy, as will be noted in *Table 11*. First year enrolments, while decreasing for five years prior to 1958-1959, have steadily increased since that time.

It is the opinion, based on experience, of the Deans or Directors of Canada's pharmacy schools, that approximately 80 per cent of those that enter pharmacy

eventually finish the course. Only 54 per cent finish without repeating a year, as is shown in *Table 12*. There is thus an attrition rate of approximately 20 per cent over the full term of a university course in pharmacy.

In addition to those enrolled in Canadian schools, there are 15 undergraduates and 14 graduate Canadian students in pharmacy courses in the United States. It is impossible to predict the percentage of these people, detailed in *Table 13*, that will return to this country following the acquisition of undergraduate or graduate degrees.

The Survey of Pharmacy Students, conducted as part of another study in this series, reveals that 4.66 per cent of current undergraduates in Canadian pharmacy schools lived the greatest part of their life outside of Canada. Whether these students will remain in Canada following graduation is difficult to determine, but the immigration and emigration of students following graduation will, partially at least, tend to negate each other. It is interesting to note, also, from *Table 14*, that the greatest proportion of foreign undergraduates in Canadian schools came from areas of the world other than Europe and the United States.

The Survey of Pharmacy Students also gives an indication of how current undergraduates will distribute themselves among the areas of pharmacy upon graduation. From *Table 15*, it can be determined that, of the students indicating a specific area in pharmacy, approximately 70 per cent intend to enter the retail field, 13.5 per cent hospital, 1.2 per cent armed forces, 1.3 per cent government service, 10.6 per cent manufacturing, and 3.1 per cent university teaching or research. About 3 per cent of pharmacy students intend to leave the profession for fields outside of the profession upon graduation.

Pharmacy graduates numbered over 350 per year during the peak enrolment period of the early 1950's according to *Table 16*. Increased enrolment indicates that recent numbers of yearly graduates from 270 to 275 will be surpassed in years immediately in the future.

A striking feature of these figures, not mentioned previously in this section, is the increase of women in schools of pharmacy. Females represented 11.3 per cent of total enrolment in pharmacy schools in 1948-1949. From this figure, the proportion of women to total enrolment has increased to 26.0 per cent in 1961-1962. In the Faculty of Pharmacy of the University of Alberta, women accounted for 41.6 per cent of total registration during the 1961-1962 school year. In all likelihood, this trend will continue, since first year enrolments show the higher proportions of women to enrolment of 26.8 per cent in the country as a whole, and 42.4 per cent in Alberta during 1961-1962.

But what of the future? How many pharmacy graduates may we expect our educational facilities to produce in the years to come?

In 1961, E. F. Sheffield predicted enrolment in Canadian universities until 1970-1971.[1] He predicted a 1964-1965 enrolment of 166,300 or a 36.9 per cent increase over the actual 1961-1962 level, and a 1969-1970 enrolment of 159,500 or a 131.3 per cent increase over the actual 1961-1962 level. Assuming that these predictions prove accurate, and assuming, also, that pharmacy enrolment will increase proportionately to total enrolment, a pharmacy enrolment of 2,093 in 1964-1965, and 3,537 in 1969-1970 would be expected. In periods of rising enrolment, the number of pharmacy graduates has approximated 20 per cent of total pharmacy enrolment, so that we would expect 419 pharmacy graduates in 1965 and 707 in 1970. Based on the same calculations, pharmacy graduates, by years to 1970, would be as follows:

1963	342
1964	380
1965	419
1966	460
1967	514
1968	572
1969	637
1970	707

However, this prediction is based upon pharmacy enrolment increasing at the same rate as total university enrolment. This, as *Table 9* shows, has not been the case in the past, with pharmacy enrolment being 2.42 per cent of total university enrolment in 1952-1953, and only 1.26 per cent of total university enrolment in 1961-1962. Based as they are on 1961-1962 levels, the predictions set out previously will only be valid if pharmacy enrolments maintain at 1.26 per cent of total university enrolment, and the downtrend in this relationship noted since 1952-1953 terminates.

Increased size of both facilities and staffs of the schools of pharmacy would seem to make such an increase possible. The critical area in these predictions hinges on whether sufficient young men and women will be motivated into following a career in pharmacy. In this, the recruitment efforts of the colleges and professional bodies will have a marked effect.

On balance, even though earlier predictions set pharmacy graduates in 1965 at 575 and in 1970 at 840, and were thus higher than ours,[2] we believe that the last few years have proved that pharmacy enrolments will not maintain at 1.26 per cent of total university enrolments in the future and, therefore, that the predictions as set out above, are somewhat high. Out predictions have, therefore, been graduated on the assumption

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[1]Sheffield, E.F., *Enrolment in Canadian Universities and Colleges to 1970-1971.* Ottawa: Canadian Universities Foundation, 1962.

[2]1960 predictions by the Canadian Conference of Pharmaceutical Faculties.

that pharmacy enrolment will approximate 1.0 per cent of total university enrolment by 1970. On this basis, the following graduates per year relationship is indicated:

1963	305
1964	337
1965	370
1966	404
1967	440
1968	478
1969	519
1970	564

Even at this level, which mirrors considerably less growth than will be experienced by universities as a whole, these predictions envisage over twice the output of graduates in 1970 as was experienced in 1962. Perhaps vigorous recruitment effort will be required even to maintain graduates at this level.

TABLE 8

TOTAL REGISTRATION OF UNDERGRADUATE STUDENTS IN CANADIAN SCHOOLS OF PHARMACY

Faculty or School of Pharmacy Location		SCHOOL YEAR															
		1947/48	1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
University of British Columbia[2]	Male	118	169	159	127	107	107	107	106	106	108	94	93	98	115	87	105
	Female	18	25	29	31	28	26	25	31	30	35	27	33	44	40	38	41
	Total	136	194	188	158	135	133	132	137	136	143	121	126	142	155	125	146
University of Alberta[1]	Male	95	106	93	82	74	90	102	93	88	89	95	97	116	118	118	–
	Female	25	19	22	13	16	17	19	28	37	37	51	72	86	96	84	–
	Total	120	125	115	95	90	107	121	121	125	126	146	169	202	214	202	–
University of Saskatchewan[1]	Male	204	206	161	134	112	109	113	104	106	95	90	120	127	136	177	–
	Female	43	30	24	26	16	16	11	15	14	27	35	47	61	57	66	–
	Total	247	236	185	160	128	125	124	119	120	122	125	167	188	193	243	–
University of Manitoba[1]	Male	83	91	97	92	88	77	84	72	68	56	63	81	76	74	71	–
	Female	13	8	4	5	5	6	10	10	11	6	5	19	19	28	33	–
	Total	96	99	101	97	93	83	94	82	79	62	68	100	95	102	104	–
University of Toronto[1]	Male	246	256	278	320	364	399	224	256	276	287	263	253	254	271	286	296
	Female	50	49	44	44	58	75	57	62	76	52	64	69	77	104	110	131
	Total	296	305	322	364	422	474	281	318	352	339	327	322	331	375	396	427
University of Montreal[2]	Male	257	321	299	349	337	341	322	297	247	219	188	227	212	260	243	254
	Female	18	22	30	18	17	20	26	30	36	34	31	39	40	57	55	61
	Total	275	343	329	367	354	361	348	327	283	253	219	266	252	317	298	315
Laval University[2]	Male	61	71	85	91	82	79	72	65	72	70	67	70	73	77	98	88
	Female	4	5	11	13	12	13	6	5	3	3	2	2	1	6	6	17
	Total	65	76	96	104	94	92	78	70	75	73	69	72	74	83	104	105
Dalhousie University[2]	Male	61	59	54	59	45	43	30	30	24	29	34	26	24	41	66	70
	Female	5	5	6	2	6	7	3	4	2	3	7	8	10	10	10	14
	Total	66	64	60	61	51	50	33	34	26	32	41	34	34	51	76	84
CANADA TOTAL	Male	1,125	1,279	1,226	1,254	1,209	1,245	1,054	1,023	987	953	894	966	980	1,092	1,146	–
	Female	176	163	170	152	158	180	157	185	209	197	222	287	338	398	402	–
	Total	1,301	1,442	1,396	1,406	1,367	1,425	1,211	1,208	1,196	1,150	1,116	1,253	1,318	1,490	1,548	–

[1]Minutes of Annual Meetings of the Canadian Conference of Pharmaceutical Faculties.
[2]As quoted by Deans or Directors of individual schools.

TABLE 9

PERCENTAGE OF TOTAL UNDERGRADUATE PHARMACY STUDENTS' ENROLMENT TO TOTAL UNDERGRADUATE ENROLMENT IN ALL CANADIAN UNIVERSITIES AND COLLEGES

School Year	Total Undergraduate Pharmacy Enrolment	Total Undergraduate Enrolment In Canada	Per Cent
1947–48	1,271	76,896	1.65
1948–49[1]	1,111	66,679	1.67
1949–50	1,432	62,846	2.28
1950–51	1,383	59,160	2.34
1951–52	1,355	57,301	2.36
1952–53	1,367	56,589	2.42
1953–54	1,256	57,961	2.17
1954–55	1,212	62,291	1.95
1955–56	1,198	66,177	1.81
1956–57	1,145	72,629	1.58
1957–58	1,100	80,443	1.37
1958–59	1,219	88,010	1.39
1959–60	1,307	94,928	1.38
1960–61	1,482	105,911	1.40
1961–62	1,529	121,547	1.26

1 Excluding University of Montreal.

Source: Dominion Bureau of Statistics, Fall Enrolment in Universities and Colleges, 1947 to 1961 editions.

TABLE 10

PERCENTAGE OF TOTAL PHARMACY STUDENTS' ENROLMENT TO TOTAL ENROLMENT OF UNIVERSITIES CONTAINING PHARMACY FACILITIES (Undergraduate only)

University	Undergrads	SCHOOL YEAR														
		1947/48	1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62
University of British Columbia	Total Enrol.	8,845	8,226	7,087	5,880	5,128	4,948	5,049	5,407	5,873	7,083	8,257	9,015	9,543	10,401	11,804
	Phcy. Enrol.	134	196	188	157	135	131	129	137	133	142	117	121	138	177	137
	%	1.5	2.4	2.7	2.7	2.6	2.7	2.6	2.5	2.3	2.0	1.4	1.3	1.5	1.7	1.2
University of Alberta	Total Enrol.	4,151	3,814	3,307	2,705	2,755	2,840	3,105	3,183	3,444	3,717	4,097	4,824	5,538	6,453	7,524
	Phcy. Enrol.	120	124	116	95	88	101	121	120	126	125	141	163	194	207	200
	%	2.9	3.3	3.5	3.5	3.2	3.6	3.9	3.8	3.7	3.4	3.5	3.4	3.5	3.2	2.7
University of Saskatchewan	Total Enrol.	4,402	3,853	2,969	2,202	1,857	1,847	1,992	2,206	2,532	2,798	3,188	3,698	4,011	4,618	5,267
	Phcy. Enrol.	248	239	187	160	124	122	133	126	120	121	123	171	181	198	234
	%	5.6	6.2	6.3	7.3	6.7	6.6	6.7	5.7	4.7	4.3	3.9	4.6	4.5	4.3	4.4
University of Manitoba	Total Enrol.	6,217	5,456	5,066	4,405	2,695	2,701	2,844	2,919	2,928	2,986	3,209	3,441	3,757	3,921	4,141
	Phcy. Enrol.	95	99	103	96	92	84	91	82	79	63	66	101	95	103	102
	%	1.5	1.8	2.0	2.2	3.4	3.1	3.2	2.8	2.7	2.1	2.1	2.9	2.5	2.6	2.5
University of Toronto	Total Enrol.	14,750[1]	13,684[1]	11,343[1]	9,956	6,649	6,292	6,143	6,356	6,443	6,594	6,639	6,896	6,934	7,257	7,541
	Phcy. Enrol.	296	307	318	367	421	427	322	318	352	348	324	321	332	377	373
	%	2.0	2.2	2.8	3.7	6.3	6.8	5.2	5.0	5.5	5.3	4.9	4.7	4.8	5.2	5.0
University of Montreal	Total Enrol.	6,385	N/A	3,280	6,466	7,340	7,338	7,245	7,469	8,371	9.000	9,512	10,639	11,106	12,810	14,819
	Phcy. Enrol.	228	N/A	368	352	352	360	343	326	287	247	220	230	261	319	303
	%	3.6	–	11.2	5.4	4.8	4.9	4.7	4.4	3.4	2.7	2.3	2.2	2.4	2.5	2.0
Laval University	Total Enrol.	4,674	4,957	5,183	5,421	4,927	5,521	5,764	6,137	6,130	6,538	7,568	8,256	8,750	9,719	10,820
	Phcy. Enrol.	66	76	97	101	93	92	84	69	75	67	68	77	74	82	104
	%	1.4	1.5	1.9	1.9	1.9	1.7	1.5	1.1	1.2	1.0	0.9	0.9	0.8	0.8	1.0
Dalhousie University	Total Enrol.	1,780	1,643	1,548	1,437	1,226	1,189	1,200	1,205	1,209	1,292	1,331	1,353	1,422	1,621	1,778
	Phcy. Enrol.	84	70	55	55	50	50	33	34	26	32	41	35	32	48	76
	%	4.7	4.3	3.6	3.8	4.1	4.2	2.8	2.8	2.2	2.5	3.1	2.6	2.3	3.0	4.3
CANADA Total	Total Enrol.	51,204	41,633[2]	39,783	38,472	32,577	32,676	33,342	34,882	36,930	40,008	43,751	48,122	51,081	56,800	63,694
	Phcy. Enrol.	1,271	1,111	1,432	1,383	1,355	1,367	1,256	1,212	1,198	1,145	1,100	1,219	1,307	1,482	1,529
	%	2.5	2.7	3.6	3.6	4.2	4.2	3.8	3.5	3.2	2.9	2.5	2.5	2.6	2.6	2.4

1 Includes enrolment in affiliated colleges of arts.
2 Excluding University of Montreal.
Source: Dominion Bureau of Statistics, Fall Enrolment in Universities and Colleges, 1947 to 1961 editions.

TABLE 11
FIRST YEAR ENROLMENT OF STUDENTS IN CANADIAN SCHOOLS OF PHARMACY

Faculty or School of Pharmacy Location		SCHOOL YEAR															
		1947/48	1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
University of British Col.[2]	Male	65	64	46	38	31	42	42	44	43	39	25	38	41	49	20	49
	Female	11	9	9	11	10	8	9	13	9	17	12	15	22	13	18	12
	Total	76	73	55	49	41	50	51	57	52	56	37	53	63	62	38	61
University of Alberta[1]	Male	38	40	25	25	29	41	39	29	31	35	35	29	49	44	37	
	Female	13	8	6	3	8	8	7	9	18	13	24	36	32	35	27	
	Total	51	48	31	28	37	49	46	38	49	48	59	65	81	79	64	
University of Sask.[1]	Male	65	53	31	31	19	35	25	22	22	24	23	36	39	51	59	
	Female	15	4	5	7	3	2	6	6	3	16	14	16	14	16	23	
	Total	80	57	36	38	22	37	31	28	25	40	37	52	53	67	82	
University of Manitoba[1]	Male	37	37	29	31	31	24	33	21	18	23	23	45	26	22	22	
	Female	1	1	2	2	1	3	7	2	4	2	1	16	3	10	10	
	Total	38	38	31	33	32	27	40	23	22	25	24	61	29	32	32	
University of Toronto[1]	Male	127	126	154	156	153	133	69	89	64	63	55	63	68	86	74	64
	Female	24	25	20	23	23	30	16	12	22	12	19	17	28	34	29	40
	Total	151	151	174	179	176	163	85	101	86	75	74	80	96	120	103	104
University of Montreal[2]	Male	89	122	86	110	98	86	93	79	63	56	48	88	86	128	95	82
	Female	9	9	14	5	2	8	14	15	13	7	9	19	18	23	23	16
	Total	98	131	100	115	100	94	107	94	76	63	57	107	104	151	118	98
Laval University[2]	Male	25	35	33	25	19	27	17	18	25	19	16	23	25	37	32	29
	Female	1	3	8	2	2	2	2	0	0	0	2	1	0	4	2	11
	Total	26	38	41	27	21	29	19	18	25	19	18	24	25	41	34	40
Dalhousie University[2]	Male	18	18	10	13	6	9	4	5	7	8	8	10	9	19	29	14
	Female	1	1	—	—	2	3	—	2	1	1	2	2	3	4	3	7
	Total	19	19	10	13	8	12	4	7	8	9	10	12	12	23	32	21
CANADA TOTAL	Male	464	495	414	429	386	397	322	307	273	267	233	332	343	436	368	
	Female	75	60	64	53	51	64	61	59	70	68	83	122	120	139	135	
	Total	539	555	478	482	437	461	383	366	343	335	316	454	463	575	503	

[1] Minutes of General Meetings of the Canadian Conference of Pharmaceutical Faculties.
[2] As quoted by Deans or Directors of individual schools.

TABLE 12

ATTRITION IN CANADIAN FACULTIES AND SCHOOLS OF PHARMACY

Faculty or School of Pharmacy	Percentage of Students Who Enter First Year Pharmacy					Who Never Complete Course	Total
	WHO GRADUATE:--						
	Without Repeating a Year	After Repeating One Year	After Repeating Two Years	After Repeating More Than Two Years	Total Percentage Who Complete Course		Per Cent
U. B. C.	65	10	2	1	78	22	100
U. of Alta.	–	–	–	–	–	–	100
U. of Sask.	–	–	–	–	–	–	100
U. of Man.	–	–	–	–	–	–	100
U. of Toronto.	–	–	–	–	–	–	100
U. of Montreal	40	20	10	–	70	30	100
Laval	75	10	3	–	88	12	100
Dalhousie	35	35	20	–	90	10	100
CANADA Average	54	17	9	1	81	19	100

Source: As quoted by Deans or Directors of individual schools.

TABLE 13

CANADIANS IN AMERICAN SCHOOLS OF PHARMACY, 1961-1962

School	Number of Canadian Undergraduates	Number of Canadian Graduate Students
Auburn	1	–
Buffalo	1	--
California	1	--
Houston	1	–
Iowa	–	1
Michigan	1	1
Minnesota	–	2
New England College	1	–
North Dakota	2	–
Ohio	–	1
P. C. P.	–	2
Purdue	–	4
Rhode Island	–	1
Tennessee	1	–
Washington State	2	–
Washington University	–	2
Wayne University	4	–
TOTAL	15	14

Source: Data supplied by the American Association of Colleges of Pharmacy, 1962.

TABLE 14

GEOGRAPHICAL SOURCE OF CURRENT PHARMACY STUDENTS, 1962

Area in Which Student Lived Longest Prior to University	Number of Respondents	Percentage of Total Respondents
British Columbia	98	7.37
Alberta	165	12.41
Saskatchewan	192	14.44
Manitoba	96	7.22
Ontario	331	24.89
Quebec	318	23.91
New Brunswick	18	1.36
Nova Scotia	42	3.16
Prince Edward Island	8	0.60
Newfoundland	0	0.00
Yukon and N.W.T.	0	0.00
CANADA TOTAL	1,268	95.34
United States	2	0.15
Great Britain	4	0.30
Other European	24	1.80
Other Non-European	32	2.41
FOREIGN TOTAL	62	4.66
TOTAL	1,330	100.00

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 15

PROBABLE FIELD OF PRACTICE OF PRESENT UNDERGRADUATES, 1962

Province of Residence	Year of Course	EXPECTED FIELD OF PRACTICE									Total Number of Respondents
		RETAIL					MANUFACTURING				
		Conventional	Presc. only	Hospital	Armed Forces	Gov't. Serv.	Sales	Product or Research	Univ. Teaching or Research	Other	
British Columbia	First	13	2	9	0	2	0	0	0	1	27
	Second	17	4	5	0	0	2	3	1	2	34
	Third	20	6	7	0	0	2	0	0	3	38
	Fourth	4	1	0	0	0	0	0	0	0	5
Alberta	First	33	5	7	0	1	1	1	1	5	54
	Second	27	7	8	2	0	1	0	2	2	49
	Third	43	1	8	1	1	1	4	0	4	63
	Fourth	1	0	0	0	0	0	1	0	0	2
Sask.	First	32	3	16	2	0	4	0	1	3	61
	Second	32	2	11	1	1	2	2	0	2	53
	Third	19	1	12	0	1	1	1	2	1	38
	Fourth	23	6	6	0	0	0	3	2	1	41

TABLE 15 (Concluded)

PROBABLE FIELD OF PRACTICE OF PRESENT UNDERGRADUATES, 1962

Province of Residence	Year of Course	EXPECTED FIELD OF PRACTICE									Total Number of Respondents
		RETAIL					MANUFACTURING				
		Conventional	Presc. only	Hospital	Armed Forces	Gov't. Serv.	Sales	Product or Research	Univ. Teaching or Research	Other	
Manitoba	First	8	0	8	2	0	0	5	1	1	25
	Second	15	4	2	0	0	0	2	0	4	27
	Third	10	1	5	0	0	1	2	2	0	21
	Fourth	10	4	5	0	0	1	0	2	0	22
Ontario	First	40	6	17	3	2	3	14	2	6	93
	Second	51	10	16	1	5	1	8	4	7	103
	Third	55	6	8	0	1	0	11	2	10	93
	Fourth	37	2	9	0	0	0	5	1	5	59
Quebec	First	60	13	11	1	2	9	15	5	6	122
	Second	53	17	8	0	0	3	5	3	2	91
	Third	24	8	8	0	0	2	3	4	3	52
	Fourth	23	5	10	1	0	0	1	2	2	44
New Brunswick	First	9	1	0	0	0	0	0	0	0	10
	Second	3	1	1	0	0	0	0	0	1	6
	Third	2	0	0	0	0	0	0	0	0	2
	Fourth	0	0	0	0	0	0	0	0	0	0
Nova Scotia	First	12	1	1	0	0	1	1	0	0	16
	Second	9	0	3	0	0	2	1	0	0	15
	Third	6	0	1	1	0	2	0	0	1	11
	Fourth	0	0	0	0	0	0	0	0	0	0
Prince Edward Island	First	0	0	0	0	0	0	0	0	0	0
	Second	3	0	0	0	0	0	0	0	0	3
	Third	4	0	0	0	0	1	0	0	0	5
	Fourth	0	0	0	0	0	0	0	0	0	0
CANADA TOTAL	First	207	31	69	8	7	18	36	10	22	408
	Second	210	45	54	4	6	11	21	10	20	381
	Third	183	49	23	2	3	10	21	10	22	323
	Fourth	98	30	18	1	0	1	10	7	8	173

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 16

GRADUATES OF CANADIAN SCHOOLS OF PHARMACY

YEAR

Faculty or School of Pharmacy Location		1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
University of British Columbia	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
University of Alberta	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
University of Saskatchewan	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
University of Manitoba	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
University of Toronto	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	72	61	–
University of Montreal[2]	Male	–	42	77	84	65	89	79	69	70	55	34	48	33	40	24	40
	Female	–	1	2	5	4	5	5	4	5	9	7	8	4	7	9	9
	Total	–	43	79	89	69	94	84	73	75	64	41	56	37	47	33	49
Laval University	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dalhousie University	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CANADA TOTAL[1]	Male	255	370	341	312	332	328	316	225	236	–	–	–	–	–	–	–
	Female	55	57	50	42	38	49	31	40	58	–	–	–	–	–	–	–
	Total	310	427	391	354	370	377	347	265	294	262	240	254	270	–	–	–

[1] Proceedings of the Canadian Conference of Pharmaceutical Faculties.
[2] As quoted by Deans or Directors of individual schools.

C. ECONOMIC ASPECTS OF THE RECRUITMENT OF PHARMACY STUDENTS

In this section, attention will be directed to such topics as the importance of economic incentives to enter the profession of pharmacy, the economic background of pharmacy students, a cost analysis of attending a school of pharmacy and a consideration of the adequacy of scholarships. Much of the information supplied is drawn from the Dominion Bureau of Statistics "Survey of Income and Expenditures of University and College Students, 1962". The size of the sample used in this survey varied, depending on the region and the enrolment. In the case of pharmacy the sample was 65 per cent at Dalhousie, slightly over 50 per cent in Quebec, 25 to 30 per cent in Ontario and 25 per cent in the West. In the sample of 1,507 students 500 were studying pharmacy.

Another survey of pharmacy students was undertaken for the Royal Commission on Health Services and is also utilized in this section. It covered 1,335 out of the total of 1,507 Canadian pharmacy students.

In the latter survey the students were asked to indicate three incentives that had influenced them to enter pharmacy as a career and to rank these choices as first, second and third. *Table 17* gives the percentage distribution of their replies. In this study, we are concerned primarily with the relative importance of economic incentives. In all, 33.2 per cent of students made expected salary one of their three choices, 42.8 per cent made one of their three choices security and job availability and 16.4 per cent chose prospect of financial success as one of their selections. In the case of salary and prospective financial success, the largest percentage of those making these choices ranked this incentive as third choice. Security was ranked first by the largest proportion making this choice. However, these economic incentives were over-shadowed by the 46.9 per cent who chose pleasure of working with medical science and health and by the 43.7 per cent who chose satisfaction of humanitarian role as one of their three choices. This would seem to indicate that students placed economic incentives secondary to humanitarian motives, but it should be remembered that even if one is motivated by economic incentives, there would be a natural reluctance to admit, especially at the student stage, that one's choice was made primarily on this basis. It is, therefore, entirely likely that the fact that economic incentives ranked fairly high in this survey would mean that they are a primary motivation for entry of the profession. This should not be taken to mean that they are the only motivation or even that they are the most important one. They are simply one of the important elements which enter into the decision to follow a career in pharmacy. Total lack of either adequate financial reward or desirable nature of work would decrease entrants to the profession drastically. The importance of either cannot be minimized.

Pharmacy students are drawn from all levels of economic background as is shown in *Table 18*. A total of 51.9 per cent of students estimate the average annual income of the chief wage earner in their family at below $6,000. Only 14.1 per cent estimate this income at $10,000 or more.

A wealth of information is available on the cost of attending university and is presented in *Tables 19* to *25*. The first of these, *Table 19*, outlines the average education and living costs of pharmacy students with other professional courses for comparison. It can be seen that the average pharmacy student spent $1,550 in 1962 during the school term, $543 of which could be directly attributed to education and the remaining $1,007 for living and social costs. This is approximately equal to the expenditure of the average engineering student but at least 25 per cent lower than the expenditures of students in law, medicine or dentistry. Living costs are less for pharmacy students than for the other three categories of students.

Whether he is married or single and whether he is living at home or away from home makes a great deal of difference in a student's living costs. *Table 20* which assesses these factors for all students shows that a single student living away from home spends 54 per cent more than a single student living at home on living costs and a married student living with his spouse spends 313 per cent more on living expenses than does the single student living at home, and even 178 per cent more than the single student living away from home. It is clear that the saying "two can live as cheaply as one" does not have application to university students.

The part of the country in which the student attends college has some effect on his expenditure. The average yearly expenditure of pharmacy students, with those of other faculties for comparison, is broken down by regions in *Table 21*. There is no region of the country which imposes higher costs generally on all of students in the faculties cited. However, students' expenditures in pharmacy are considerably higher in the province of Quebec than they are elsewhere. *Table 22* breaks down total average expenditures by faculty and region for single and married students.

As shown by *Table 23*, the year of expected graduation has little effect on the median expenditure of pharmacy students.

From *Table 24* it can be seen that median expenditures of pharmacy students increase with the age of the student. Students in other faculties show an identical trend. Where pharmacy students under 20 years of age have median expenditures of $1,238, students in this faculty 25 years of age or older have median expenditures of $1,879 or 52 per cent more.

Students in the Pharmacy Student Survey were asked about the relative difficulty they experienced in financing their education. Almost nine per cent replied that this was very difficult as shown in *Table 25*. A further 44.2 per cent described financing their education as fairly difficult while 46.7 per cent encountered little or no difficulty in this regard. Thus, it seems that over half of pharmacy students experience some degree of difficulty in financing their education.

Much information is also available in the area of sources of financial support for the student and is presented here in *Tables 26 to 33*. A percentage breakdown of the income of pharmacy students on the basis of source, with comparative figures for students in other faculties, is presented in *Table 26*. Savings from summer employment and funds from parental family together account for 51.2 per cent of the

average pharmacy student's income. It is worthy of note also, that the average pharmacy student receives a considerably larger portion of his income from earnings from part-time jobs during the school year than do students in any of the other faculties, and that the pharmacy student draws more heavily upon personal savings. Surprisingly enough, pharmacy students also rely more upon funds from their parental family than do students in other fields even though, as outlined previously, the economic background of pharmacy students generally is not opulent.

Almost as many, 45.5 per cent, pharmacy students receive funds from earnings from part-time jobs during the school year as receive funds from their parental family, 51.7 per cent. This is indicated in *Table 27* which shows also that a smaller percentage of pharmacy students receive aid through scholarships and bursaries than do students in other faculties. Like students in the other faculties, savings from summer employment contribute to the incomes of the largest number of pharmacy students.

Table 28 shows the average amounts of income received by students from contributing sources. We see that a pharmacy student's income from all sources is approximately equal to that of an engineering student but considerably less than that received by students in the other faculties used for comparison. The pharmacy students' average income from all sources of $1,634 compares with the average expenditure of $1,550 shown previously.

Students in the Survey of Pharmacy Students rated the relative importance of various sources of financial assistance as is shown in *Table 29*. Over 70 per cent depended on financial assistance of some degree from family, relatives and personal benefactors while over 75 per cent relied on funds from employment during vacations to some degree. Over one-third depended upon funds from part-time employment during the school year.

As the most important source of financial assistance to the student, parents' contributions are related to marital status and sex of the student in *Table 30*. As would be expected, women receive more financial aid from their parents than do males with the average female receiving $795 while the average male receives $672 from this source. A greater percentage of women also receive financial assistance from this source (74.8 per cent as compared to 59.4 per cent of males). Both sexes living away from home and single receive more financial support from their families.

In *Table 31*, parents' contributions to students' income are related to the income of the parent, type of home residence and total student expenditure. It is apparent that students' reliance on financial assistance from the family increases as the income of the parent increases, and also that the level of parents' financial assistance rises with their income. Students from farms generally receive less financial help from their families than do students from urban areas. As the students' total expenditure rises, he receives a greater amount of financial assistance from his family.

Table 32 relates scholarships to the age of the student and to the expected year of graduation for pharmacy students and for students in other selected faculties.

The percentage of students with scholarships and the median amount of scholarship both increase with the age of the student. Here too, it can be seen that proportionately few pharmacy students receive scholarships especially in the younger age groups, than do students in other faculties. In any assessment of the adequacy of scholarships, both the size of the median scholarship and the frequency with which scholarships are granted must be considered.

As already discussed, *Table 28* shows that the average scholarship received by pharmacy students in 1962 was $336, and the table also indicated that this amount was higher than the average scholarship received by law or dentistry students by a slight amount, and considerably lower than the average scholarship received by students of engineering or medicine. The size of these scholarships has been related to average student expenditure in *Table 33*. From this we see that the median scholarship for pharmacy students was 21.7 per cent of the average expenditure of pharmacy students in 1962. Thus, the average student receiving a scholarship, if his expenditures were also average, would find that it covered this proportion of his total costs. Similar relationships shown in the table for students in other faculties show that the median scholarship of pharmacy students compares quite favourably with these other areas. Of course the proportionate relationship seems high for pharmacy students not because the median scholarship is high, but because the average expenditure of pharmacy students is so low. However, on a comparative basis with students in other faculties, we must conclude that the median scholarship received by pharmacy students is of roughly comparable size. This is not to say that it is an adequate size with respect to the financial needs of the recipients.

In *Table 27*, it was shown that only 28.6 per cent of pharmacy students receive financial aid from scholarships and bursaries. As noted in discussion of this table, this is a smaller percentage than in engineering (39.3 per cent), law (33.2 per cent), medicine(41.9 per cent) and dentistry (31.0 per cent). This seems to point up the inadequacy of pharmacy scholarships. The need for more scholarships in this area is underlined by the fact that 45.5 per cent of pharmacy students supplement their income to some degree from part-time employment during the school year. As well, discussion of *Table 25* indicated that 52.8 per cent of pharmacy students experience a degree of difficulty in financing their education.

TABLE 17

RELATIVE IMPORTANCE OF INCENTIVES TO ENTER THE PROFESSION OF PHARMACY AS EXPRESSED BY PHARMACY UNDERGRADUATES, 1962

Specific Incentive Choices	Rank of Choice	Per Cent of Students in Area Making Specific Choice										
		Province of Residence										
		B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Not Stated	Canada
1. Salary Expected	First	13.0	7.7	8.1	11.3	6.5	9.5	5.6	11.9	12.5	0.0	8.6
	Second	6.5	10.1	13.1	12.4	10.2	7.7	22.0	9.5	12.5	17.6	10.1
	Third	17.6	15.4	16.2	16.5	13.3	12.0	27.8	11.9	12.5	17.6	14.5
	Total	37.1	33.2	37.4	40.2	30.0	29.2	55.4	33.3	37.5	35.2	33.2

TABLE 17 (Concluded)

RELATIVE IMPORTANCE OF INCENTIVES TO ENTER THE PROFESSION OF PHARMACY AS EXPRESSED BY PHARMACY UNDERGRADUATES, 1962

Specific Incentive Choices	Rank of Choice	Per Cent of Students in Area Making Specific Choice — Province of Residence										
		B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Not Stated	Canada
2. Satisfaction of Humanitarian Role	First	10.2	23.7	27.3	18.6	25.5	18.2	27.8	11.9	25.0	52.9	21.9
	Second	16.7	12.4	13.6	15.5	13.0	9.5	0.0	11.9	25.0	11.8	12.5
	Third	8.3	10.7	14.1	9.3	8.8	7.4	5.6	9.5	0.0	0.0	9.3
	Total	35.2	46.8	55.0	43.4	47.3	35.1	33.4	33.3	50.0	64.7	43.7
3. Prestige and Standing in Community	First	6.5	2.4	2.0	3.1	4.5	2.2	5.6	4.8	0.0	11.8	3.4
	Second	11.1	10.1	6.6	5.2	4.5	4.9	22.2	2.4	12.5	17.6	6.6
	Third	10.2	9.5	10.1	12.4	10.2	5.5	0.0	9.5	0.0	0.0	8.8
	Total	27.8	22.0	18.7	20.7	19.2	12.6	27.8	16.7	12.5	29.4	18.8
4. Security, Stability and Job Availability	First	25.9	21.3	19.2	25.8	15.0	10.2	27.8	26.2	50.0	0.0	17.5
	Second	12.0	14.8	15.7	11.3	17.8	9.8	16.7	19.0	0.0	11.8	14.1
	Third	15.7	9.5	16.7	11.3	11.0	7.4	16.7	11.9	12.5	5.9	11.2
	Total	53.6	45.6	51.6	48.4	43.8	27.4	61.2	57.1	62.5	17.7	42.8
5. Pleasure of Working with Medical Science & Health	First	19.4	21.9	16.7	26.8	25.5	16.6	5.6	19.0	0.0	17.6	20.4
	Second	17.6	10.7	13.1	18.6	19.8	16.0	22.2	14.3	0.0	17.6	16.2
	Third	11.1	7.1	9.1	9.3	13.0	8.6	5.6	14.3	25.0	23.5	10.3
	Total	48.1	39.7	38.9	54.7	58.3	41.2	33.4	47.6	25.0	58.7	46.9
6. Prospect of Future Independence	First	5.6	5.9	7.1	2.1	5.4	5.8	16.7	16.7	0.0	0.0	6.0
	Second	8.3	6.5	7.6	3.1	6.2	10.8	5.6	14.3	12.5	0.0	7.7
	Third	7.4	5.9	4.5	3.1	4.8	7.4	5.6	4.8	12.5	5.9	5.7
	Total	21.3	18.3	19.2	8.3	16.4	24.0	27.9	25.8	25.0	5.9	19.4
7. Prospect of Mixture of Professional & Business	First	2.8	3.6	4.0	4.1	2.5	11.7	5.6	0.0	0.0	5.9	5.2
	Second	3.7	4.1	3.0	4.1	3.4	7.4	0.0	4.8	12.5	0.0	4.5
	Third	1.9	0.0	4.5	1.0	4.5	7.1	5.6	2.4	0.0	5.9	4.0
	Total	8.4	7.7	11.5	9.2	10.4	26.2	11.2	7.2	12.5	11.8	13.7
8. Pleasure of Meeting Public and Dealing with People	First	4.6	4.7	7.6	3.1	5.9	2.5	5.6	4.8	0.0	0.0	4.7
	Second	12.0	14.2	14.6	13.4	13.9	4.6	5.6	9.5	25.0	5.9	11.3
	Third	10.2	24.3	13.1	20.6	9.9	8.0	22.2	11.9	0.0	11.8	12.7
	Total	26.8	43.2	35.3	37.1	29.7	15.1	33.4	26.2	25.0	17.7	28.7
9. Prospect of Financial Success	First	3.7	1.2	4.5	2.1	3.1	4.9	0.0	2.4	12.5	0.0	3.4
	Second	3.7	7.1	1.5	6.2	2.5	6.5	5.6	9.5	0.0	0.0	4.5
	Third	6.5	6.5	5.6	7.2	9.1	11.7	0.0	9.5	12.5	17.6	8.5
	Total	13.9	14.8	11.6	15.5	14.7	23.1	5.6	21.4	25.0	17.6	16.4
10. Variety and Diversity of Daily Tasks	First	7.4	5.9	3.0	3.1	4.5	1.2	0.0	0.0	0.0	0.0	3.5
	Second	8.3	8.3	10.1	10.3	7.1	4.3	0.0	2.4	0.0	5.9	7.0
	Third	11.1	9.5	5.6	9.3	13.6	6.2	11.1	11.9	25.0	0.0	9.4
	Total	26.8	23.7	18.7	22.7	25.2	11.7	11.1	14.3	25.0	5.9	19.9
No Answer	First	0.9	1.8	0.5	0.0	1.4	17.2	0.0	2.4	0.0	11.8	5.2
	Second	0.0	1.8	1.0	0.0	1.4	18.5	0.0	2.4	0.0	11.8	5.5
	Third	0.0	1.8	0.5	0.0	1.7	18.8	0.0	2.4	0.0	11.8	5.5
Number of Respondents		108	169	198	97	353	325	18	42	8	17	1,335

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 18

ANNUAL INCOME OF CHIEF WAGE EARNER IN FAMILY OF PHARMACY STUDENTS AS ESTIMATED BY THE STUDENTS, CANADA AND BY PROVINCE OF RESIDENCE, 1962

Estimated Average Annual Income of Chief Wage Earner in Family	Percentage of Students in Area Making Each Estimate											Number of Respondents
	Province of Residence[1]											
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Not Stated	Canada	
	Per Cent											
Less than $2,000	1.9	3.5	4.0	4.1	3.1	2.4	5.6	9.5	0.0	11.8	3.4	46
$2,000 – $3,999	21.3	17.8	22.7	28.9	20.7	18.8	11.1	23.8	37.5	5.9	20.7	276
$4,000 – $5,999	37.0	24.3	26.3	31.0	29.2	25.5	33.3	23.8	25.0	23.5	27.8	371
$6,000 – $7,999	17.6	21.9	17.7	18.6	14.2	12.3	22.2	16.6	25.0	5.9	16.0	213
$8,000 – $9,999	6.5	7.7	8.1	7.2	11.2	6.8	5.6	2.4	0.0	0.0	8.0	107
$10,000 – $14,999	2.8	10.6	8.1	4.1	10.2	7.1	5.6	4.8	0.0	5.9	7.8	104
$15,000 – $19,999	7.4	1.8	0.5	1.0	2.8	4.9	0.0	4.8	0.0	0.0	3.1	41
$20,000 – $29,999	0.9	2.4	2.0	1.0	1.4	3.7	5.5	0.0	12.5	0.0	2.2	29
Over $30,000	0.0	0.0	1.0	0.0	0.6	3.1	0.0	0.0	0.0	0.0	1.0	14
No Estimate	4.6	10.0	9.6	4.1	6.5	15.4	11.1	14.3	0.0	47.0	10.0	134
Area Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Number of Respondents	108	169	198	97	353	325	18	42	8	17		1,335

[1] No respondents from Newfoundland.

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 19

AVERAGE EDUCATION AND LIVING COSTS OF STUDENTS, 1962

Item of Expenditure	FACULTY				
	Pharmacy	Engineering	Law	Medicine	Dentistry
	DOLLARS				
Fees (Tuition, Etc.)	397	452	401	572	524
Dues (Fraternity, Etc.) ...	38	33	39	41	55
Text Books	71	80	70	106	79
School Supplies and Equipment	26	32	25	70	30
Transportation (Other than local)	65	67	88	85	89
Education Costs.....	543	610	551	802	744
Transportation (Local)....	74	66	89	81	96
Room and Board or Household Operating Costs.....	609	609	910	854	994
Recreation, Refreshments, Cigarettes, Etc.	161	162	254	185	208
Grooming (Haircuts, Laundry, Etc.)	43	38	60	61	73
Clothing.....	141	115	159	143	152
Health	52	48	75	53	76
Durable Items	176	167	250	354	328
Church and Charitable Donations	22	22	30	36	26
Living Costs.....	1,007	943	1,499	1,444	1,721
TOTAL EXPENDITURES	1,550	1,553	2,050	2,246	2,465

Source: Dominion Bureau of Statistics, *Survey of Income and Expenditures of University and College Students, 1962.*

TABLE 20

AVERAGE EDUCATION AND LIVING COSTS FOR SINGLE AND MARRIED STUDENTS, 1962

Items of Expenditures	SINGLE		Married Living With Spouse
	Living at Home	Living Away From Home	
	DOLLARS		
Fees (Tuition, Etc.)	413	388	417
Dues (Fraternity, Etc.)	40	32	33
Text Books	71	73	78
School Supplies and Equipment	32	32	48
Transportation (Other than Local)	93	65	103
Education Costs	548	552	584
Transportation (Local)	74	59	97
Room and Board or Household Operating Costs	275	561	1,643
Recreation, Refreshments, Cigarettes, Etc.	166	153	193
Grooming (Haircuts, Laundry, Etc.)	38	45	75
Clothing	147	122	160
Health	55	39	106
Durable Items	187	146	495
Church and Charitable Donations	21	19	56
Living Costs	648	998	2,777
TOTAL EXPENDITURES	1,196	1,550	3,361

Source: Dominion Bureau of Statistics, *Survey of Income and Expenditures of University and College Students, 1962.*

TABLE 21

STUDENT EXPENDITURES – FACULTIES AND REGIONS

Faculty and Region	Less Than $800	$800 to $999	$1,000 to $1,199	$1,200 to $1,399	$1,400 to $1,599	$1,600 to $1,799	$1,800 to $1,999	$2,000 to $2,999	$3,000 or More	Total	Average Expenditure
	Per Cent										Dollars
Pharmacy	5.2	9.3	18.4	18.9	14.0	11.9	7.9	9.2	5.2	100.0	1,550
East	10.0	6.0	16.0	22.0	18.0	10.0	8.0	6.0	4.0	100.0	1,512
Quebec	2.1	6.2	12.3	11.6	11.6	12.3	15.8	20.6	7.5	100.0	1,842
Ontario	2.7	14.0	16.7	19.3	16.7	17.3	6.6	2.7	4.0	100.0	1,447
West	8.0	8.7	23.3	22.7	13.3	8.7	4.0	6.7	4.6	100.0	1,443
Arts – Sciences	12.1	15.0	16.6	17.9	16.4	8.8	4.8	5.8	2.6	100.0	1,352
East	12.5	12.3	12.5	24.6	20.3	8.8	4.2	3.8	1.0	100.0	1,299
Quebec	14.0	16.8	15.5	14.8	12.7	8.5	6.3	9.6	2.4	100.0	1,339
Ontario	6.9	14.8	13.7	17.0	21.0	11.9	6.0	5.9	2.8	100.0	1,412
West	16.5	15.3	21.9	17.8	12.1	5.6	2.8	4.8	3.2	100.0	1,300
Education	13.5	15.9	21.5	15.6	9.7	6.2	2.9	10.1	4.6	100.0	1,415
East	12.3	28.4	27.0	16.2	6.5	2.9	2.2	3.1	1.4	100.0	1,145
Quebec	9.6	12.4	13.3	10.1	15.4	14.1	10.9	10.5	3.7	100.0	1,516
Ontario	15.4	11.1	15.8	17.1	10.4	6.4	2.7	10.4	10.7	100.0	1,622
West	14.3	14.5	22.5	16.4	9.3	5.3	1.5	11.4	4.8	100.0	1,431
Engineering	4.6	10.7	12.9	18.1	17.2	13.6	9.2	9.5	4.2	100.0	1,553
East	8.2	8.6	7.7	20.7	23.0	14.8	7.1	8.0	1.9	100.0	1,470
Quebec	6.0	13.6	15.5	12.0	14.5	13.1	12.6	8.7	4.0	100.0	1,530
Ontario	0.5	7.3	12.8	16.3	18.8	19.2	9.7	10.8	4.6	100.0	1,658
West	5.2	11.5	12.6	24.7	16.1	8.7	6.3	9.9	5.0	100.0	1,524
Law	2.8	7.0	10.0	11.5	11.4	12.8	11.6	17.2	15.7	100.0	2,050
East	2.0	7.0	6.0	8.0	19.0	14.0	8.0	19.0	17.0	100.0	2,061
Quebec	4.7	10.0	11.4	10.1	9.7	14.8	12.1	15.1	12.1	100.0	1,922
Ontario	1.3	4.7	10.1	13.3	11.7	9.3	13.3	18.3	18.0	100.0	2,121
West	2.0	5.6	8.7	11.7	11.7	14.6	9.0	18.7	10.0	100.0	2,149
Medicine	0.1	2.4	7.0	7.3	12.5	12.3	13.4	27.8	17.1	100.0	2,246
East	–	3.0	3.0	3.0	11.0	10.0	14.0	25.0	31.0	100.0	2,606
Quebec	0.3	4.7	12.3	8.0	12.3	10.3	11.7	23.4	17.0	100.0	2,205
Ontario	–	0.6	3.0	6.7	10.3	13.0	15.7	36.0	14.7	100.0	2,272
West	–	1.3	6.3	8.3	17.4	15.7	12.3	21.3	17.4	100.0	2,162
Dentistry	0.2	0.8	3.0	8.7	9.6	9.7	10.4	35.0	22.6	100.0	2,465
East	–	–	–	–	4.2	–	8.5	42.6	44.7	100.0	3,111
Quebec	–	0.7	0.7	8.0	7.3	8.6	12.0	42.0	20.7	100.0	2,540
Ontario	–	1.3	4.7	10.7	12.0	14.0	10.7	29.3	17.3	100.0	2,249
West	0.7	–	2.6	7.2	8.5	4.6	8.5	37.2	30.7	100.0	2,676

Source: Dominion Bureau of Statistics, *Survey of Income and Expenditures of University and College Students, 1962.*

TABLE 22

AVERAGE EXPENDITURE OF MARRIED STUDENTS AND SINGLE STUDENTS, AT HOME AND AWAY FROM HOME, 1962

Faculty and Region	Single		Married Living With Spouse
	Living at Home	Living Away from Home	
Pharmacy	1,302	1,602	3,072
East	1,106	1,413	2,598
Quebec	1,552	2,050	3,575
Ontario	1,144	1,612	3,157
West	1,078	1,364	2,839
Engineering	1,162	1,592	3,003
East	964	1,494	2,789
Quebec	1,151	1,772	3,419
Ontario	1,270	1,746	3,239
West	1,170	1,476	2,793
Law	1,350	1,777	3,721
East	1,146	1,738	3,730
Quebec	1,463	1,841	4,290
Ontario	1,258	1,837	3,724
West	1,315	1,671	3,490
Medicine	1,652	1,989	3,871
East	1,458	2,003	4,119
Quebec	1,572	2,061	4,660
Ontario	1,864	2,018	3,594
West	1,603	1,875	3,546
Dentistry	1,652	2,231	3,929
East	[1]	2,354	3,849
Quebec	1,755	2,341	4,151
Ontario	1,543	2,115	3,570
West	1,646	2,166	4,110

[1]Sample too small to provide meaningful figure.

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 23

MEDIAN STUDENT EXPENDITURE BY YEAR OF EXPECTED GRADUATION, 1962

Faculty	YEAR OF EXPECTED GRADUATION			
	1962	1963	1964	1965
	Median Expenditure — Dollars			
Pharmacy	1,461	1,366	1,410	1,403
Arts — Science	1,380	1,287	1,235	1,184
Education	1,403	1,381	1,165	1,074
Engineering	1,641	1,579	1,372	1,358
Law	2,510	2,016	1,936	1,758
Dentistry	2,706	2,352	2,401	1,942

Source: Dominion Bureau of Statistics, *Survey of Income and Expenditures of University and College Students, 1962.*

TABLE 24

EFFECT OF AGE OF THE STUDENT UPON MEDIAN EXPENDITURE, 1962

Faculty	Age of Student						
	Under 18	18	19	20	21	22 to 24	25 or Older
	Median Expenditure — Dollars						
Pharmacy	1,238			1,290	1,372	1,530	1,879
Arts — Science	1,099	1,123	1,235	1,239	1,303	1,388	1,768
Education	1,038	1,015	1,065	1,120	1,223	1,375	1,947
Engineering	1,249	1,256	1,277	1,419	1,474	1,552	2,147
Law	1,330				1,551	1,662	2,099
Medicine	1,619				1,728	1,937	2,548
Dentistry	1,813				1,955	2,261	3,000

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 25

RELATIVE DIFFICULTY OF FINANCING EDUCATION IN PHARMACY AS EXPRESSED BY PHARMACY STUDENTS, 1962

Estimate of Difficulty in Financing Education	Percentage of Students in Area Making Each Assessment											Number of Respondents
	Province of Residence[1]											
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Not Stated	Canada	
	Per Cent											
Very Difficult	13.9	9.5	5.6	3.1	7.4	10.2	16.7	9.5	0.0	23.5	8.6	115
Fairly Difficult	48.1	49.1	41.4	46.4	46.2	36.0	61.1	69.0	37.5	29.4	44.2	590
Not Very Difficult	25.9	30.2	41.4	39.2	33.1	27.7	22.2	14.3	37.5	29.4	31.8	424
Not at All Difficult	11.1	10.7	11.6	11.3	13.0	25 5	0.0	4.8	25.0	11.8	14.9	199
No Estimate	0.0	0.5	0.0	0.0	0.3	0.6	0.0	2.4	0.0	5.9	0.5	6
Area Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Number of Respondents	108	169	198	97	353	325	18	42	8	17		1,335

[1] No respondents from Newfoundland.

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 26

PERCENTAGE OF STUDENTS' TOTAL INCOME RECEIVED FROM INDIVIDUAL SOURCES, 1962

Source of Income	FACULTY				
	Pharmacy	Engineering	Law	Medicine	Dentistry
	Per Cent				
Fellowships, Assistantships, Scholarships and Bursaries ..	6.1	10.3	5.5	7.8	4.6
D.V.A., Ntl. Defence, R.O.T.P..	1.3	5.4	0.7	5.3	7.2
Other Grants-in-aid	0.4	0.6	0.5	0.4	0.5
Leave of Absence with Pay	0.4	0.7	0.4	—	—
Loans:					
(a) From Parental Family	4.4	5.6	4.3	7.8	6.9
(b) From College.....	1.2	0.8	0.6	0.9	1.3
(c) From Bank or Insurance Company.....	1.1	1.6	2.1	2.6	1.8
(d) From Provincial Gov't	2.0	4.1	3.7	3.8	4.2
(e) From Other Sources	2.2	1.3	1.6	2.2	2.4
Funds from Parental Family	23.4	16.7	20.8	22.0	15.7
Funds from Spouse	4.3	6.3	13.5	11.9	20.6
Gifts from Relatives, Friends...	1.4	1.2	2.4	1.8	1.9
Savings from Summer Employment	27.8	34.6	22.9	18.4	21.5
Earnings from Part-time Jobs During School Year.....	13.8	2.3	9.1	5.2	2.2
Personal Savings (Other than Above)	6.3	4.8	4.2	3.1	4.2
Investment, Endowments, Insurance, Etc.	0.9	0.9	4.2	2.6	1.2
Other Sources	0.8	0.6	1.1	0.7	0.9
Income Needed	2.2	2.2	2.4	3.5	2.9
Total.....	100.0	100.0	100.0	100.0	100.0

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 27

PER CENT OF STUDENTS RECEIVING FUNDS FROM CONTRIBUTING SOURCES, 1962

Source of Income	FACULTY				
	Pharmacy	Engineering	Law	Medicine	Dentistry
	Per Cent				
Fellowships and Assistantships	0.5	1.4	0.8	3.3	0.5
Scholarships and Bursaries	28.6	39.3	33.2	41.9	31.0
D.V.A., Ntl. Defence, R.O.T.P.	1.6	6.3	1.6	5.9	8.5
Other Grants-in-aid	3.0	4.1	3.1	3.0	3.5
Leave of Absence with Pay....	1.7	0.4	0.3	0.1	0.3
Loans:					
(a) From Parental Family....	14.3	21.4	18.8	22.9	23.5
(b) From College	4.6	4.1	4.0	7.4	8.1
(c) From Bank or Insurance Company	2.9	6.2	8.4	6.5	6.8
(d) From Provincial Gov't ...	10.9	18.6	22.1	22.2	23.0
(e) From Other Sources.....	7.6	7.0	8.5	10.7	10.6
Funds from Parental Family ...	51.7	47.8	55.0	53.4	43.8
Funds from Spouse	4.9	6.8	15.4	13.4	21.2
Gifts from Relatives, Friends ..	14.1	14.6	16.8	18.5	13.2
Savings From Summer Employment	80.2	83.4	76.3	78.3	77.4
Earnings from Part-time Jobs During School Year	45.5	15.7	30.3	20.7	18.4
Personal Savings (Other than Above).....	23.0	23.6	18.2	19.5	20.5
Investment, Endowments, Insurance, Etc.	3.8	5.2	10.0	6.6	5.4
Other Sources.....	4.5	4.3	7.2	3.4	4.8

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 28

AVERAGE AMOUNTS OF INCOME RECEIVED BY STUDENTS FROM CONTRIBUTING SOURCES, 1962

Source of Income	FACULTY				
	Pharmacy	Engineering	Law	Medicine	Dentistry
	Dollars				
Fellowships and Assistantships	272	778	206	545	323
Scholarships and Bursaries	336	386	327	384	333
D.V.A., Ntl. Defence, R.O.T.P.	1,180	1,459	908	2,062	1,950
Other Grants-in-aid	198	215	273	311	460
Leave of Absence with Pay	348	2,019	629	227	120
Loans:					
(a) From Parental Family	467	424	479	794	718
(b) From College	315	302	293	255	371
(c) From Bank or Insurance .. Company	449	414	567	890	594
(d) From Provincial Gov't....	321	368	354	422	466
(e) From Other Sources	413	300	363	499	566
Funds from Parental Family....	716	564	784	955	886
Funds from Spouse	1,406	1,501	1,852	2,086	2,320
Gifts from Relatives, Friends ..	163	135	294	224	361
Savings from Summer Employment	529	669	644	549	677
Earnings from Part-time Jobs During School Year	435	235	565	555	269
Personal Savings (Other than Above).....	460	329	489	400	505
Investments, Endowments, Insurance, Etc.	315	268	875	749	488
Other Sources	236	222	344	502	469
Income From All Sources	1,634	1,621	2,130	2,344	2,654

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 29

RELATIVE IMPORTANCE OF VARIOUS SOURCES OF FINANCIAL ASSISTANCE TO STUDENTS AS EXPRESSED BY PHARMACY UNDERGRADUATES, 1962

Sources of Financing	Percentage Distribution of Students' Replies on Basis of Extent of Assistance as a Percentage of Total Costs							
	None	20 Per Cent or Less	21 to 40 Per Cent	41 to 60 Per Cent	61 to 80 Per Cent	81 to 100 Per Cent	No Answer	Total
1. Family, Relatives and Personal Benefactors ...	24.1	18.3	13.9	13.3	11.2	14.9	4.3	100.0
2. Employment During Vacations	20.1	20.4	21.7	17.2	10.0	5.9	4.7	100.0
3. Part-time Employment While Attending Pharmacy School	59.6	22.3	7.6	2.9	1.2	1.9	4.5	100.0
4. Government Scholarships, Bursaries, Grants.....	70.3	12.5	7.0	3.9	1.0	0.4	4.9	100.0
5. University Scholarships, Bursaries, Grants.....	84.3	8.1	1.6	1.0	0.1	0.1	4.8	100.0
6. Loans from Universities or Other Sources.....	83.2	6.6	3.2	1.8	0.4	0.2	4.6	100.0
7. Employed Spouse	87.5	2.2	1.0	1.1	0.6	0.9	6.7	100.0
8. Other Government Provisions (R.O.T.P., C.O.T.C., Etc.).....	93.9	0.4	0.2	0.1	0.4	0.4	4.6	100.0
9. Personal Savings from Prior Years	70.2	19.2	2.5	1.5	0.7	1.6	4.3	100.0
10. Other	92.7	1.1	0.7	0.1	0.1	0.4	4.9	100.0

Source: Royal Commission on Health Services, Survey of Students of Pharmacy in Canada, 1962.

TABLE 30

PARENTS' CONTRIBUTIONS TO STUDENTS' INCOMES ACCORDING TO SEX AND MARITAL STATUS OF STUDENT, 1962

Sex and Marital Status of Students	Funds From Parents	
	Recipients as a Per Cent of all Students in Category	Average Value of Funds Received
	Per Cent	Dollars
Male:	59.4	672
Single, Living at Home	60.8	565
Single, Living Away from Home	62.3	764
Married, Living with Spouse	23.6	893
Female:	74.8	795
Single, Living at Home	76.7	703
Single, Living Away from Home	74.5	893
Married, Living with Spouse	[1]	[1]

[1] Sample too small to provide meaningful figures.

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 31

PARENTS' CONTRIBUTION TO STUDENTS' INCOMES RELATED TO INCOME OF PARENT, HOME RESIDENCE AND TOTAL STUDENT EXPENDITURE, 1962

	No Funds From Family	Funds From Family								Median Funds from Family
		Less than $200	$200 to $399	$400 to $599	$600 to $799	$800 to $999	$1,000 to $1,499	$1,500 or More	Total	Total	
	Per Cent										Dollars
Parents' Income:											
Less than $5,000	60.5	10.4	10.6	7.1	3.8	2.5	4.0	1.0	39.5	100.0	396
$5,000 — $6,999	44.6	9.7	10.7	10.7	7.5	5.8	7.9	3.1	55.4	100.0	536
$7,000 — $9,999	37.2	7.7	11.4	10.7	10.7	6.6	10.8	4.9	62.8	100.0	630
$10,000 or more	26.1	4.9	10.2	7.5	8.9	8.8	17.5	16.1	73.9	100.0	922
Median Income $	under 5,000	5,103	5,732	6,042	7,266	7,812	8,690	10,000+	6,695		
Home Residence:											
On a Farm	51.9	9.4	11.2	7.9	4.7	5.4	6.9	2.6	48.1	100.0	486
In Centres with Population under 10,000	46.9	9.1	11.3	8.7	6,5	4.3	9.4	3.8	53.1	100.0	541
10,000 — 99,999	44.8	9.2	8.4	8.5	7.4	4.7	10.2	6.8	55.2	100.0	638
100,000 and over	47.1	7.8	11.0	8.1	7.0	5.4	7.9	5.7	52.9	100.0	586
Total Student Expenditure:											
Less than $1,000	39.4	16.6	18.4	11.6	8.3	4.6	0.9	0.2	60.6	100.0	348
$1,000 — $1,199	44.6	8.8	13.0	10.3	8.7	6.2	8.4	—	55.4	100.0	515
$1,200 — $1,399	43.8	9.0	11.4	8.6	8.7	6.4	11.8	0.3	56.2	100.0	577
$1,400 — $1,599	44.5	8.2	6.7	8.8	8.1	5.7	14.5	3.5	55.5	100.0	698
$1,600 — $1,799	45.8	6.3	7.4	9.1	6.8	4.8	11.4	8.4	54.2	100.0	725
$1,800 — $1,999	44.5	4.8	10.5	5.5	4.1	6.0	14.1	10.5	55.5	100.0	894
$2,000 — $2,499	49.8	5.3	5.2	5.2	3.0	5.1	9.2	17.2	50.2	100.0	1,070
$2,500 or more	70.6	1.6	4.4	3.3	2,2	1.2	4.0	12.7	29.4	100.0	1,255
Median Expenditure $	1,499	1,183	1,193	1,283	1,287	1,355	1,515	2,112	1,368		

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 32

SCHOLARSHIPS RELATED TO AGE OF THE STUDENT AND EXPECTED YEAR OF GRADUATION, 1962

Faculty and Age of Student	Per Cent With Scholarships	Median Scholarships	Faculty and Year of Graduation	Per Cent With Scholarships	Median Scholarships
	Per Cent	Dollars		Per Cent	Dollars
Pharmacy			Pharmacy		
18 – 20 years	25.9	355	1962	32.1	345
21 – 24 years	29.0	307	1963	28.7	327
25 and over	36.8	412	1964	23.4	362
			1965	34.4	320
Engineering			Engineering		
18 – 20 years	38.5	365	1962	31.2	355
21 – 24 years	34.7	329	1963	37.3	338
25 and over	33.9	366	1964	34.4	338
			1965	39.6	366
Law			Law		
18 – 20 years	35.1	266	1962	34.7	326
21 – 24 years	33.9	300	1963	34.0	278
25 and over	30.8	315	1964	30.6	317
			1965	35.6	266
Medicine			Medicine		
18 – 20 years	38.5	325	1962	32.0	349
21 – 24 years	41.6	335	1963	42.2	326
25 and over	40.2	329	1964	43.2	350
			1965	43.7	313
Dentistry			Dentistry		
18 – 20 years	25.0	287	1962	42.5	413
21 – 24 years	31.6	302	1963	40.3	399
25 and over	41.2	467	1964	24.4	306
			1965	27.9	287

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

TABLE 33

PROPORTION OF AVERAGE SCHOLARSHIP TO AVERAGE STUDENT EXPENDITURE, SELECTED FACULTIES, 1962

Faculty	Average Scholarship Income per Student Receiving Assistance Dollars	Average Student Expenditure Dollars	Proportion of Average Scholarship to Average Student Expenditure Per Cent
Pharmacy	336	1,550	21.7
Engineering	386	1,553	24.9
Law	327	2,050	16.0
Medicine	384	2,246	17.1
Dentistry	333	2,465	13.5

Source: Dominion Bureau of Statistics, Survey of Income and Expenditures of University and College Students, 1962.

D. DEATH RATES OF PHARMACISTS

The death of pharmacy practitioners is, of course, a negative factor in supply. It is a factor which should be measured and its effect on supply of pharmacists assessed, in any presentation dealing with manpower of pharmacists. Unfortunately, no measurement of this factor exists in Canada. Vital statistics are not maintained of pharmacists as a group. This is a severe statistical deficiency which, although important to a study such as this, is unobtainable for any purpose.

E. EXPECTED RETIREMENT RATES OF PHARMACISTS

In order to assess the effect on the supply of pharmacists by those retiring from active participation in the profession at intervals in the future, respondents to the Pharmacist Survey were asked to indicate how long they intended to practise before retirement. The results of this inquiry are set out in *Table 34*.

Of those pharmacists now actively practising, 10.1 per cent expect to retire in less than five years, 13.8 per cent in five to ten years, 13.2 per cent in 11 to 15 years, 16.2 per cent in 16 to 20 years, 22.1 per cent in 21 to 30 years, 11.0 per cent in 31 to 40 years and 6.3 per cent in over 40 years. The balance of 7.3 per cent of respondents failed to answer the question. Applying these percentages to the 1962 census of licensed pharmacists which appears as Table I, the actual number of replacements required in the various time periods has been computed below.

Time Interval	Number of Pharmacists Required as Replacements for those Retiring
Less than 5 years	1,111
5 - 10 years	1,518
11 - 15 years	1,452
16 - 20 years	1,782
21 - 30 years	2,431
31 - 40 years	1,210

By 1967, 1,111 replacements will be required for normal retirement of pharmacists. By 1972 the total will have reached 2,629; by 1977, 4,071 and by 1982, 5,853. On the basis of this 1982 estimate, a yearly replacement number of 244 new licensed pharmacists will be required each year in the interval to maintain a licensed pharmacist workforce equivalent in number to that which is current.

TABLE 34

EXPECTED RETIREMENT RATES OF PHARMACISTS, 1962

Sex and Expected Time of Retirement	Province of Residence												Canada
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	
	Per Cent												
Male													
Less than 5 yrs.	11	5	9	7	9	5	9	9	12	10	—	12	8.2
5 — 10 years	10	10	12	12	16	9	15	9	—	3	—	7	12.6
11 — 15 years	14	12	15	13	15	11	11	13	—	10	25	9	13.7
16 — 20 years	19	17	13	18	18	16	16	17	33	13	25	7	17.0
21 — 30 years	24	25	25	26	21	30	29	26	22	23	50	9	24.1
31 — 40 years	12	18	16	16	10	14	11	10	22	17	—	2	12.3
Over 40 years	6	10	6	4	6	9	6	11	11	13	—	2	6.7
Not stated	4	3	4	4	5	6	3	5	—	11	—	52	5.4
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	549	428	300	315	2,076	709	80	141	9	30	4	43	4,604
Female													
Less than 5 yrs.	16	39	23	12	19	9	—	12	—	—	—	3	18.9
5 — 10 years	14	17	23	12	15	14	80	12	—	—	—	12	15.6
11 — 15 years	8	8	8	—	8	18	—	6	67	—	—	3	8.6
16 — 20 years	9	7	—	18	13	14	—	29	—	50	—	—	10.3
21 — 30 years	19	8	18	24	18	16	—	6	33	—	—	3	15.2
31 — 40 years	8	1	5	18	8	5	—	12	—	—	—	—	6.4
Over 40 years	11	4	8	6	3	5	20	6	—	—	—	—	4.9
Not stated	15	16	15	10	16	19	—	17	—	50	—	79	20.1
Total	100	100	100	100	100	100	100	100	100	100	—	100	100.0
Number Respondents	74	72	40	17	205	44	5	17	3	2	0	34	513
Sex Unstated													
Less than 5 yrs.	27	28	23	32	17	10	40	7	—	—	—	6	18.5
5 — 10 years	20	28	17	21	27	20	60	27	—	—	—	6	23.6
11 — 15 years	18	8	20	15	14	14	—	27	—	—	—	—	13.9
16 — 20 years	20	16	7	15	15	15	—	27	67	100	—	—	15.1
21 — 30 years	6	8	10	6	10	22	—	—	—	—	—	—	9.7
31 — 40 years	4	—	7	6	3	3	—	7	—	—	—	—	3.4
Over 40 years	—	8	3	—	5	7	—	—	—	—	—	—	4.0
Not stated	5	4	13	5	9	9	—	5	33	—	—	88	11.8
Total	100	100	100	100	100	100	100	100	100	100	—	100	100.0
Number Respondents	51	25	30	34	235	59	5	15	3	1	0	17	475
Totals													
Less than 5 yrs.	13	11	12	10	11	6	10	9	7	9	—	7	10.1
5 — 10 years	11	12	13	13	17	10	21	11	—	3	—	9	13.8
11 — 15 years	13	11	15	12	14	12	10	13	13	9	25	5	13.2
16 — 20 years	18	16	11	17	17	16	14	19	33	18	25	3	16.2
21 — 30 years	22	22	23	24	20	29	26	22	20	21	50	5	22.1
31 — 40 years	11	15	14	15	9	13	10	10	13	15	—	1	11.0
Over 40 years	6	9	6	4	5	8	7	9	7	12	—	1	6.3
Not stated	6	4	6	5	7	6	2	7	7	13	—	69	7.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

It is also possible that premature death of some pharmacists will shorten their expected professional life and therefore accelerate the withdrawal rate from the profession. For this reason, the replacement figure of 244 new licensed pharmacists should be considered a bare minimum. It is also entirely likely that pharmacists as a group will not be spared from debilitating physical states which make premature retirement mandatory.

It is of interest to note also from *Table 34*, that women pharmacists expect to retire from active practice in the profession at a much faster rate than do men. This fact is dramatized by the knowledge that 34.5 per cent of females expect to leave the profession in ten years or less while only 20.8 per cent of males will retire this early. In examining the relative ages of male and female pharmacists set out in *Table 36* we note that 54.4 per cent of females are under thirty-five years of age while only 29.9 per cent of males are this young. The conclusion is inescapable that female pharmacists generally have a shorter professional life expectancy than males. With increasing numbers of women attracted to the profession of pharmacy, as we have seen previously, replacement requirements could increase considerably. For example, a female pharmacist graduating from a school of pharmacy in the spring of 1963 and practising for five years or less would swell the required replacement rate in 1968.

Because of this factor, it is interesting to study the position of the Province of Alberta since it possesses the largest proportion of female pharmacists of any area in Canada. *Table 34* would indicate a total replacement rate for this province approximately equal to the Canadian average. However, this position is only maintained due to unusually long active lives expected by the province's male pharmacists.

How increasing numbers of women in the profession will affect replacement rates of pharmacists in the future is clear enough. However, to what extent it will increase the total replacement rate is impossible to determine from the data available and due to the impossibility of predicting proportions, by sex, of anticipated new entrants to the profession.

Before leaving this section, it should be re-emphasized that the replacement rate determined is designed to maintain current numbers of licensed pharmacists only. In a later portion of the study growth rates or additional new pharmacists required to maintain a constant relationship to population will be discussed.

F. NET IMMIGRATION AS A SOURCE OF PHARMACY MANPOWER

Regrettably, the Department of Citizenship and Immigration of the Canadian Government cannot supply statistics on the immigration of pharmacists to this country. Also it is impossible to determine the numbers of Canadian pharmacists who emigrate to other lands.

From the response to the Pharmacist Survey it is possible to determine that all pharmacists currently employed in Canada and who were born outside of this country and received their formal education as pharmacists prior to immigration,

account for only 4.3 per cent of the total workforce in Canadian pharmacy. This cannot be considered a significant portion of total pharmacy practitioners.

As will be shown in Chapter 3 of this study, immigration of pharmacists peaked in the years immediately following the Second World War and has declined ever since. Of the total group of immigrant pharmacists currently practising, only 15.5 per cent have entered Canada within the last five years. When it is considered that flow of immigrant pharmacists to Canada over the latest five-year period was 15.5 per cent or 4.3 per cent of the total Canadian workforce, the relative unimportance of this factor to considerations of manpower can be seen. In addition, the premise is developed in Chapter 3 of this study, that rapidly rising educational standards in Canada will have the effect of discouraging immigration and reducing the numbers of pharmacists from other lands who will seek to practise in Canada.

Emigration is a totally unknown quantity. However, it is not believed to be significant proportionately to our total pharmacist workforce.

Net immigration, of course, is immigration minus emigration. Thus, these two relatively insignificant trends have the effect of cancelling each other to a considerable degree and decreasing their significance to manpower requirements even further.

It is unfortunate that these two factors bearing on manpower flow cannot be accurately measured. However, evidence and opinion would indicate that the net gain or loss of pharmacists, after these factors are equated, would not disturb the conclusions drawn in their absence.

G. CONCLUDING OBSERVATIONS

The Canadian schools and faculties of pharmacy, as would be expected, are the most important source of pharmacist manpower within this country. Past trends in enrolment and graduates of these institutions are not indicative of the future for a variety of reasons, but it is believed that present expansion of physical and staff facilities within the colleges, together with anticipated explosion in university enrolments, generally will serve to increase the output of the schools of pharmacy in the next decade. Indeed, the last four years have seen a slight improvement in total registration within these schools. However, it is not believed that pharmacy enrolment will increase at the rate of university enrolment generally. For this reason, our estimate of pharmacy graduates to the year 1970 is based on an anticipated relationship of pharmacy enrolment to total university enrolment of 1 per cent by that year.

It can be anticipated that approximately 3 per cent of pharmacy graduates will be lost to the profession immediately upon graduation through entering entirely unrelated fields of endeavour.

Our predicted retirement rates have been based on the number of licensed pharmacists in Canada. It is apparent that these will be somewhat understated, since licensed pharmacists are only a portion, although, we expect, a fairly large one, of the

total pharmacist workforce. Indeed, this study has been hampered throughout by the lack of a reliable census of pharmacy manpower in Canada. It is expected that retirement rates, as predicted, will be understated too, through the impossibility to predict premature retirement or death prior to expected retirement. We must, therefore, consider that retirement rates, as predicted herein, are a bare minimum and that residual numbers of pharmacists available to fill unsatisfied demand, as will be itemized shortly, are absolute maximums.

Due to the total lack of data, the net effect of immigration on pharmacist manpower, after emigrants have been deducted, has been ignored in our predictions. However, the number of pharmacists involved is believed to be relatively insignificant and indications would lead us to believe that this factor will become even less significant as time goes on.

If our predictions, set out in *Table 35*, prove correct there will be a total expansion of the pharmacist workforce of 250 by 1965 and 1,363 by 1970.

TABLE 35

PREDICTED PHARMACY GRADUATES AVAILABLE TO FILL CURRENT UNSATISFIED DEMAND AND FUTURE DEMAND DUE TO EXPANSION TO 1970

Year	Predicted Pharmacy Graduates	Less 3% Drain of Those who Will Leave Pharmacy	Less Predicted Replacements Required	Pharmacist Available to Fill Current Unsatisfied Demand and Expansion Demand	
				Yearly	Cumulative
1963	305	9	292	4	4
1964	337	10	292	35	39
1965	370	11	292	67	106
1966	404	12	292	100	206
1967	440	13	292	135	341
1968	478	14	292	172	513
1969	519	16	292	211	724
1970	564	17	292	255	979

The importance that active recruitment could have on these figures cannot be overemphasized. As mentioned, our prediction of future graduates in pharmacy is influenced by the fact that pharmacy enrolment has been declining as a percentage of total university enrolment, and our predictions expect this trend to continue. If active recruitment reverses this trend, or even terminates it, pharmacy graduates will be much more plentiful than our figures would suggest.

We have seen that humanitarian motives and economic incentives are the most important reasons that students choose pharmacy as a career. Our study of current pharmacy students indicates that the average student is from a family in the low or

low-middle income bracket. We see a student that spends much less money than those in other faculties on social costs during a year's schooling, and that his expenditures increase with his age. The pharmacy student finds it necessary to earn a greater portion of his income from part-time jobs during the school year than do students in other faculties, and draws more heavily upon personal savings. In all, pharmacy students seem to have more difficulty in financing their education than do students in other faculties. Adding to these problems is the fact that there seem to be an inadequate number of scholarships and bursaries for the student in pharmacy. A smaller percentage of pharmacy students receive financial aid from these sources than do students in other courses. Most pharmacy students find it difficult to finance their university education. At least on a comparative basis with other faculties, the number of scholarships and bursaries in pharmacy is inadequate.

CHAPTER 3

DISTRIBUTION OF PHARMACISTS AND SOME ASPECTS OF THE PROFESSION

A. DISTRIBUTION OF CURRENT PRACTITIONERS

As noted previously, there exists no complete census of pharmacists in Canada. This fact, of course, renders any attempt at a comprehensive distribution of practitioners in this field impossible. However, the inability to accurately count all pharmacists does not preclude our counting those who can be traced through their maintenance of a professional licence in one or other of Canada's provinces, nor does it prevent us from assessing characteristics of the total group through replies of the large sample of practitioners to the Pharmacist Survey of 1962.

A provincial distribution of licensed pharmacists has already been considered in Chapter 2, and a gross numerical breakdown for 1962 appears as the last column in *Table 1* of that same chapter.

Table 36 shows that current pharmacy pratitioners are, generally speaking, a rather youthful lot. For example, 52.6 per cent of all pharmacists are between the ages of twenty-six and forty-five while only 36.6 per cent are between forty-six and sixty-five. It is also interesting to note that only 30.0 per cent of female pharmacists are over forty years of age while 54.8 per cent of male pharmacists have passed their fortieth birthday. The relative youthfulness of female practitioners is due largely to two factors. First, the profession of pharmacy has become increasingly attractive to women as a career in recent years with increasing numbers entering pharmacy schools (see part B of Chapter 2). Secondly, women are much more likely to retire from active practice at an early age than are their male counterparts, when marriage and family intervene.

As would be expected, *Table 37* shows that the same relationships exist when years of practice rather than age are tabulated. In addition, the relative scarcity of males who have practised for from sixteen to twenty years is an indication of the effect that the second world war had on entry to the profession. To have practised for this length of time, men would have to have graduated from a pharmacy school between the years of 1942 and 1946. The large increase in proportion of men who have practised between eleven and fifteen years reflects the swell in pharmacy enrolments after the war.

The preference of practitioners for an urban location of practice is shown in *Table 35*. However, it must be emphasized that rural areas and towns generally afford an opportunity to practise retail pharmacy only. Those employed in other professional areas usually must, of necessity, locate in a city where opportunities afforded by manufacturing establishments, universities, etc., exist. Although there are hospitals in rural areas, they are usually smaller in size than those in cities and quite often, due to limited budgets, operate without the services of a full-time pharmacist. Even accepting this fact, it may surprise some that less than 20 per cent of Canadian pharmacists are located in rural areas and towns of less than five thousand population. Indeed even in Saskatchewan, this figure reaches only 38 per cent. Our very large cities lure by far the largest proportion of pharmacists. In *Table 39* the sex of the pharmacist has been linked to the size of the community of present practice. From this it can be noted that women show a slightly greater affinity for practice in a city than do men with only 11.3 per cent of females locating in rural areas and towns as opposed to 18.8 per cent of males. This is very probably explained through the fact that women show less of a tendency toward the retail practice branch of the profession as will be shown presently, and as previously cited, retail practice offers the greatest opportunities in towns and rural areas.

There is no discernible difference in the age distribution of pharmacists in each size of community of practice, as appearing in *Table 40*, although the larger cities do have a slightly higher proportion of younger pharmacists. However, the younger age groups are in proportion to the total population of pharmacists in the smaller areas and the theory that rural pharmacists are older than their urban counterparts, although possibly expected by some, is not substantiated by these data.

The sex and age of pharmacists do show some dramatic influences on the type of employment which they hold. For example, male pharmacists have a much higher affinity than females for the retail,government and manufacturing branches of the profession. Female pharmacists, on the other hand, tend more strongly than males toward hospital practice with almost 28 per cent of them employed in hospitals while just slightly over 4 per cent of males are so employed. Age also exerts an influence with more and more younger pharmacists of both sexes employed in hospitals. The effect of retirement from salaried positions may be seen in a sharp drop at age 65 of the proportion of pharmacists employed in the manufacturing industry. It can be noted that although the bulk of younger pharmacists employed in retail pharmacy have employee status, by the age category of 31 to 35 years, by far the greatest percentage in this employment group are either owning or managing an establishment. It is worthy of note that most women employed in retail pharmacy continue to be employees through all age categories and a relatively small proportion achieve the position of owner or manager. Although pharmaceutical manufacturers have often been blamed for enticing a good proportion of pharmacists away from other branches of the profession, it is interesting to note that only one male pharmacist in twenty follows this line of work.

TABLE 36

DISTRIBUTION OF PHARMACISTS BY AGE AND SEX, BY PROVINCE OF CURRENT PRACTICE, 1962

Present Age (Years) Sex	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Males													
Under 20	—	—	—	—	—	—	—	—	—	—	—	—	—
20 — 25	4	6	8	3	2	1	3	2	11	17	25	7	3.3
26 — 30	11	16	13	15	7	12	9	11	22	13	—	7	10.3
31 — 35	16	19	18	16	13	28	16	17	12	23	—	2	16.3
36 — 40	14	15	12	14	15	19	15	19	22	4	—	7	15.1
41 — 45	14	13	11	15	14	11	9	13	—	23	25	2	13.4
46 — 50	13	12	11	15	14	6	13	8	11	3	50	2	11.9
51 — 55	10	8	10	9	12	8	10	6	11	7	—	17	10.2
56 — 60	6	5	7	6	10	6	8	9	11	—	—	9	8.1
61 — 65	4	3	5	2	7	6	8	9	—	—	—	14	5.9
66 — 70	3	1	3	3	3	2	3	4	—	—	—	14	2.8
Over 70	3	2	2	2	3	1	5	2	—	10	—	19	2.5
Not stated	2	—	—	—	—	—	1	—	—	—	—	—	0.2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	549	428	300	315	2,076	709	80	141	9	30	4	43	4,684
Females													
Under 20	—	—	—	—	—	—	—	5	—	—	—	—	0.2
20 — 25	20	46	35	23	9	7	20	29	—	—	—	18	19.5
26 — 30	19	16	5	23	20	7	—	6	—	—	—	28	16.2
31 — 35	17	7	23	—	24	27	—	12	—	—	—	18	18.5
36 — 40	15	17	5	18	18	9	—	18	—	—	—	15	15.0
41 — 45	9	1	10	12	8	9	—	18	—	50	—	9	8.2
46 — 50	9	4	—	18	4	20	—	12	—	—	—	3	6.6
51 — 55	—	4	13	—	8	7	—	—	67	50	—	—	6.0
56 — 60	7	—	3	6	3	7	60	—	—	—	—	9	4.3
61 — 65	1	3	3	—	5	5	20	—	33	—	—	—	3.5
66 — 70	3	1	—	—	—	—	—	—	—	—	—	—	0.6
Over 70	—	1	3	—	1	—	—	—	—	—	—	—	0.8
Not stated	—	—	—	—	—	2	—	—	—	—	—	—	0.6
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	74	72	40	17	205	44	5	17	3	2	0	34	513
Number Respondents Sex not Stated	51	25	30	34	235	59	5	15	3	1	0	17	475
Total													
Under 20	—	—	—	—	—	—	—	1	—	—	—	—	0.0
21 — 25	5	12	10	3	3	1	3	5	7	15	25	10	4.5
26 — 30	11	16	12	14	8	11	8	10	13	12	—	14	10.2
31 — 35	15	16	18	14	12	27	14	16	7	21	—	7	15.6
36 — 40	13	14	11	14	14	18	13	17	13	4	—	9	14.4
41 — 45	13	12	11	14	13	10	8	12	—	24	25	4	12.4
46 — 50	14	11	10	16	13	7	12	10	13	3	50	2	11.6
51 — 55	9	7	11	9	12	8	10	6	27	9	—	10	10.1
56 — 60	7	5	7	7	11	7	11	9	13	3	—	7	8.6
61 — 65	5	3	5	4	8	7	10	9	7	—	—	9	6.3
66 — 70	3	2	3	3	3	3	2	3	—	—	—	12	3.2
Over 70	3	2	2	2	3	1	6	2	—	9	—	15	2.8
Not stated	2	—	—	—	—	—	3	—	—	—	—	1	0.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 37

DISTRIBUTION OF PHARMACISTS BY YEARS OF PRACTICE AND SEX, BY PROVINCE OF CURRENT PRACTICE, 1962

Sex / Years of Practice	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Males													
5 or less	14	18	18	13	8	10	6	12	33	10	25	10	11.3
6 — 10	19	22	19	24	15	34	24	19	12	28	—	2	20.0
11 — 15	21	22	20	17	20	21	18	28	33	13	—	—	19.9
16 — 20	6	5	5	5	8	7	1	5	—	13	—	2	7.0
21 — 25	11	12	11	14	12	6	18	6	—	13	50	—	10.8
26 — 30	9	9	8	9	10	5	6	4	22	3	25	2	8.6
31 — 35	7	4	5	7	11	6	9	6	—	3	—	5	8.0
36 — 40	4	4	5	5	7	4	6	9	—	—	—	12	5.9
41 — 45	3	2	4	1	4	3	6	6	—	—	—	7	3.3
Over 45	4	1	2	3	3	—	5	4	—	10	—	16	2.7
Not stated	2	1	3	2	2	4	1	1	—	7	—	44	2.5
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	549	428	300	315	2,076	709	80	141	9	30	4	43	4,684
Females													
5 or less	34	51	40	41	25	23	20	41	—	—	—	24	31.2
6 — 10	16	15	10	12	30	25	—	12	34	50	—	32	22.4
11 — 15	19	13	23	29	18	14	—	29	33	—	—	15	17.7
16 — 20	14	6	10	—	9	11	—	12	—	—	—	3	8.8
21 — 25	5	6	—	12	3	5	—	—	33	—	—	3	4.1
26 — 30	5	4	5	—	3	—	20	—	—	50	—	3	3.7
31 — 35	3	1	8	—	3	—	—	6	—	—	—	—	2.5
36 — 40	4	1	2	—	4	—	20	—	—	—	—	3	3.1
41 — 45	—	—	—	—	1	2	40	—	—	—	—	—	1.0
Over 45	—	—	—	—	—	—	—	—	—	—	—	—	0.2
Not stated	—	3	2	6	4	20	—	—	—	—	—	19	5.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	74	72	40	17	205	44	5	17	3	2	0	34	513
Number Respondents Sex Not Stated	51	25	30	34	235	59	5	15	3	1	0	17	475
Total													
5 or less	15	22	19	13	9	11	7	14	20	10	25	13	12.3
6 — 10	18	20	17	22	16	33	20	18	20	27	—	13	19.3
11 — 15	20	20	19	17	19	20	16	29	27	12	—	5	19.1
16 — 20	7	6	5	6	8	6	1	6	—	12	—	2	7.1
21 — 25	10	10	10	15	11	6	15	6	7	12	50	2	10.1
26 — 30	9	9	8	8	10	5	7	3	13	9	25	3	8.4
31 — 35	8	4	7	7	11	6	9	6	13	3	—	2	8.3
36 — 40	5	5	5	6	7	4	9	8	—	—	—	7	6.2
41 — 45	3	1	5	1	4	3	8	6	—	—	—	7	3.5
Over 45	4	1	2	3	3	1	7	3	—	9	—	13	2.8
Not stated	1	2	3	2	2	5	1	1	—	6	—	33	2.9
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 38

DISTRIBUTION OF PHARMACISTS, BY SIZE OF CENTER IN WHICH CURRENT PRACTICE IS LOCATED, BY PROVINCE OF CURRENT PRACTICE, 1962

Size of Center in Which Current Practice Located	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Village, Farm or Rural	10	6	9	8	6	3	7	11	7	6	—	2	6.4
Town, Population Less than 5,000	8	21	29	15	9	5	21	21	27	21	50	1	11.7
City, Population 5,000 — 25,000	20	6	13	9	15	16	24	22	60	19	50	1	14.5
City, Population 15,000 — 50,000	6	6	6	6	11	10	16	10	—	6	—	1	9.1
City, Population 50,000 — 100,000	6	1	12	—	8	6	26	17	—	48	—	—	7.1
City, Population 100,000 — 200,000	8	3	29	1	7	2	—	16	—	—	—	—	7.2
City, Population Over 200,000	41	56	1	60	43	56	—	—	—	—	—	6	41.3
Not Stated	1	1	1	1	1	2	6	3	6	—	—	89	2.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 39

DISTRIBUTION OF MALE AND FEMALE PHARMACISTS BY SIZE OF COMMUNITY OF PRESENT PRACTICE, 1962

Size of Community of Present Practice	SEX		Total
	Male	Female	
	Per Cent	Per Cent	
Village, Farm or Rural	6.5	4.5	6.4
Town: 5,000 or Less	12.3	6.8	11.7
City: 5,000 - 25,000	14.8	10.3	14.5
City: 25,000 - 50,000	9.1	9.6	9.1
City: 50,000 - 100,000	6.9	10.3	7.1
City: 100,000 - 200,000	7.1	9.0	7.2
City: Over 200,000	41.4	41.5	41.3
Not Stated	1.9	8.0	2.7
TOTAL	100.0	100.0	100.0

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 40

SEX AND AGE DISTRIBUTION OF PHARMACISTS BY SIZE OF COMMUNITY OF PRESENT PRACTICE, 1962

Present Age (Years) Sex	Village Farm Rural	Town: 5,000 or Less	City: 5,000 to 25,000	City: 25,000 to 50,000	City: 50,000 to 100,000	City: 100,000 to 200,000	City: Over 200,000
	Per Cent						
Males							
Under 20	–	–	–	–	–	–	–
20 – 25	1	3	3	4	4	6	3
26 – 30	7	10	10	10	11	6	12
31 – 35	15	15	18	16	17	18	16
36 – 40	15	15	14	18	18	14	15
41 – 45	15	12	13	12	13	13	14
46 – 50	14	13	12	10	13	14	12
51 – 55	9	10	11	10	9	11	10
56 – 60	12	9	10	8	6	9	7
61 – 65	6	7	4	6	4	6	6
66 – 70	2	3	3	4	2	2	3
Over 70	3	3	2	2	3	1	2
Not stated	1	–	–	–	–	–	–
Total	100	100	100	100	100	100	100
Females							
Under 20	–	–	–	–	2	–	–
20 – 25	–	22	11	18	9	29	24
26 – 30	4	11	15	12	11	11	21
31 – 35	13	23	21	13	28	13	17
36 – 40	4	9	9	20	19	17	
41 – 45	26	11	10	9	11	2	6
46 – 50	9	6	9	10	4	7	6
51 – 55	9	6	11	8	4	7	5
56 – 60	17	3	6	2	6	7	3
61 – 65	9	6	2	4	6	7	2
66 – 70	–	3	4	–	–	–	–
Over 70	9	–	2	2	–	–	–
Not stated	–	–	–	2	–	–	1
Total	100	100	100	100	100	100	100

TABLE 40 (Concluded)

SEX AND AGE DISTRIBUTION OF PHARMACISTS BY SIZE OF COMMUNITY OF PRESENT PRACTICE, 1962

Present Age (Years) Sex	Village Farm Rural	Town: 5,000 or Less	City: 5,000 to 25,000	City: 25,000 to 50,000	City: 50,000 to 100,000	City: 100,000 to 200,000	City: Over 200,000
	Per Cent						
Total							
Under 20	—	—	—	—	—	—	—
20 – 25	1	4	3	5	4	8	6
26 – 30	6	10	10	9	11	7	12
31 – 35	14	14	17	15	18	17	16
36 – 40	14	13	13	18	17	13	14
41 – 45	16	12	12	11	13	12	13
46 – 50	14	13	12	11	12	12	11
51 – 55	9	10	12	9	8	11	10
56 – 60	12	10	10	8	7	9	7
61 – 65	7	7	6	6	5	7	6
66 – 70	2	4	3	4	2	2	3
Over 70	4	4	2	3	3	2	2
Not stated	1	—	—	1	—	—	—
Total	100	100	100	100	100	100	100

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

B. GEOGRAPHICAL MOBILITY OF PHARMACISTS

In an effort to gain some insight into the inter-provincial movement of pharmacists in the years between their first practice and their current practice in pharmacy, *Table 41* has distributed respondents by province on both bases. From the net change in the distribution of the sample between these years, it is clear that British Columbia sees the greatest influx of pharmacists from outside of the province and that Saskatchewan sees the greatest number leave. Women, quite surprisingly, seem as mobile as men when the country as a whole is concerned.

Table 42 shows that over 40 per cent of pharmacists do not return to their community of residence prior to university to enter their first practice and, further, that an additional 20 per cent who do return home for their first practice, do not stay there, since over 60 per cent currently practise in a different community to that in which they resided prior to university.

When *Table 43* is compared to previous *Table 35*, it will be noted that although 44.5 per cent of pharmacists began their first practice in cities of over 200,000 population, only 41.3 per cent make their current practice there. Conversely, although only 15.1 per cent of pharmacists had their first practice in a rural area or town of less than 5,000 population, 18.1 per cent currently practise in these areas. It would seem apparent, then, that there is a slightly higher tendency for young people to begin practice in a large city, but after the first practice, there is a slight tendency towards the less populated areas.

But why do pharmacists move from place to place? As can be seen from *Table 44*, the commonest answer by those who moved for both their first and current practice, was that the opportunities of the new location seemed better. It is worthy of note that 11 per cent of those who moved for their current practice stated that they had a preference for practice in a rural area. This reason was not nearly so common among those who changed location for their first practice.

On the whole, pharmacists are a remarkably mobile group of persons.

TABLE 41

COMPARISON OF PROVINCIAL DISTRIBUTION OF PHARMACISTS BY FIRST PRACTICE AND CURRENT PRACTICE, 1962

Province	First Employment				Current Employment				Net Change in Distribution of Sample		
	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total	Male	Female	Total
	Numerical								Per Cent		
British Columbia	471	67	39	577	549	74	51	674	+16.6	+10.4	+16.8
Alberta	399	72	22	493	428	72	25	525	+ 7.3		+ 6.5
Saskatchewan	415	53	44	512	300	40	30	370	−27.7	−24.5	−27.7
Manitoba	357	17	34	408	315	17	34	366	−11.8		−10.3
Ontario	2,082	220	248	2,550	2,076	205	235	2,516	− 0.3	− 6.8	− 1.3
Quebec	680	47	54	781	709	44	59	812	+ 4.3	− 6.4	+ 3.4
New Brunswick	86	10	9	105	80	5	5	90	− 7.0	−50.0	−14.3
Nova Scotia	139	16	12	167	141	17	15	173	+ 1.4	+ 6.3	+ 3.6
Prince Edward Island	11	3	3	17	9	3	3	15	−18.2		−11.8
Newfoundland	31	3	1	35	30	2	1	33	− 3.2	−33.2	− 5.7
Yukon and N.W.T.	3			3	4			4	+33.3		+33.3
Not stated	10	5	9	24	43	34	17	94			
Sample Total	4,684	513	475	5,672	4,684	513	475	5,672			

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 42

MOBILITY OF PHARMACISTS FROM COMMUNITY OF RESIDENCE PRIOR TO UNIVERSITY

	Province of Current Residence												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Pharmacists whose First Practice was in Community of Residence Prior to University	63.8	52.5	45.8	66.6	55.0	65.5	76.3	66.5	84.6	78.1	100.0		58.4
Pharmacists whose First Practice and Current Practice are both in Community of Residence Prior to University	36.4	27.0	23.5	51.6	39.1	53.5	51.3	43.2	61.5	59.4			39.9

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 43

DISTRIBUTION OF PHARMACISTS BY SIZE OF CENTER IN WHICH FIRST PRACTICE WAS LOCATED BY PROVINCE OF FIRST PRACTICE

Size of Center in Which First Employment Located	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Village, Farm or Rural	5	8	12	6	3	1	10	7	12	3	—	8	4.5
Town: Population Less than 5,000	8	20	25	10	8	3	25	17	—	22	100	—	10.6
City: Population 5,000 — 25,000	16	7	14	9	15	13	17	25	82	9	—	—	13.8
City: Population 25,000 — 50,000	6	5	13	5	10	8	20	12	—	6	—	—	8,8
City: Population 50,000 — 100,000	6	9	26	1	6	5	26	25	—	60	—	—	9.0
City: Population 100,000 — 200,000	8	13	10	6	8	3	—	13	—	—	—	—	7.7
City: Population Over 200,000	50	38	—	63	50	65	—	1	—	—	—	8	44.5
Not stated	1	—	—	—	—	2	2	—	6	—	—	84	1.1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100
Number of Respondents	577	493	512	408	2,550	781	105	167	17	35	3	24	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 44

RELATIVE IMPORTANCE OF FACTORS AFFECTING MOVE TO NEW LOCATION OF PRACTICE FOR THOSE MOVING TO FIRST PRACTICE AND CURRENT PRACTICE

Factors Affecting Move to New Location	First Employment not in Same City as Resided Prior to Entering Profession	Present Employment not in Same City as Resided Prior to Entering Profession
	Per Cent	
More opportunities in different location	24	44
Preference for city practice	4	8
Preference for rural practice	1	11
Location dictated by employer or type of employment	15	13
Other	17	15
Not stated	39	9
Total	100	100
Per cent of total survey respondents indicating	10.5	59.5

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

C. PROFESSIONAL MOBILITY OF PHARMACISTS

Having devoted some attention to the geographical mobility of pharmacists, it is of interest also to consider the professional mobility between branches of the profession of these practitioners. *Table 46* outlines the intra-professional distribution of pharmacists, by sex, between the broad areas of professional practice, for their first employment in the profession. A comparison of the gross distribution on this chart with a corresponding distribution for current practice, appears as *Table 46* and shows that although 90.64 per cent of current practitioners started out in the retail branch of the profession, only 79.60 per cent practise in this area currently. It appears that retail practice serves a considerable number of pharmacists as a bridge to other areas of practice. All other professional areas have taken pharmacists at the expense of retail pharmacy, in the interval between the pharmacists' first and current practice. Both sexes reflect this same trend which is shown through comparison of *Table 45* on first practice. It is notable that, even for their first practice, female pharmacists show a definite tendency toward hospital employment with 24.17 per cent of their number following this line of endeavour immediately following graduation. The interval between first and current practices has seen enough females whose initial practice had been in another area eventually shift to hospital employment to swell this figure to 27.87 per cent of females following hospital careers in their current practice.

From *Table 47* it can be seen that female pharmacists exhibit considerably more professional mobility than do males. While 43.7 per cent of female pharmacists currently practise in a field of pharmacy different to that in which they first practised, only 31.6 per cent of males show the same characteristic. It is, perhaps, surprising that approximately one-third of all pharmacists find their current type of employment within the profession different than the type of practice to which they originally were attracted. And this is not the total extent of pharmacists' mobility from one branch of the profession to another, for this measures only those who have a different first and current practice. It is to be expected that some of those who currently hold the same type of employment as they did originally would have strayed to another type of practice at some time in the interval between these two points of measurement.

It must be recognized that, generally speaking at least, pharmacists move freely between the various branches of the profession. Frequency of such changes in type of practice would be expected to be quite high as well since such would vary with the relative freedom of movement.

Free movement within the profession, from one type of employment to another, requires a relatively small degree of specialization in the profession. If a practitioner is able to move from retail to hospital practice, for example, this fact means that practice in a hospital requires relatively little specialized training, other than that to which all pharmacists have been exposed. Aside from highly technical positions such as those in teaching and research, the same qualifications which make a pharmacist acceptable to one branch of the profession, serve also for many other branches. This seems to impart to pharmacists a great degree of freedom of movement within their profession. However, success in a particular type of practice does not seem to necessarily be synonymous with freedom of entry to that employment. It could well be that specialization, although not necessary to entry, is the key to success.

The recognition of this relationship between specialization of knowledge and success has led over the last decade or so to the offering of more and more specialized courses within Canadian schools of pharmacy and to more attention to a specialized type of continuing education. A student may now choose during his college career to specialize in, for example, hospital pharmacy and take courses designed specifically to fit him for a career in this area. As yet, such specialization has not become a general requirement for hospital practice, mainly we would assume, because of the limited number of persons who have had the opportunity of taking such courses. However, with an increasing number of specialized graduates, specialization may become equated with competence rather than success through such specialization being established as a prerequisite to at least positions of responsibility in hospital pharmacy.

Such events, which seem almost inevitable, when they come to pass will tend to restrict the intraprofessional movement of pharmacists to a considerable degree.

TABLE 45

DISTRIBUTION OF PHARMACISTS BY TYPE OF FIRST EMPLOYMENT, BY SEX, BY PROVINCE OF FIRST EMPLOYMENT

Sex and Category of First Employment in Pharmacy	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Male:													
Retail	93	95	90	90	94	88	91	95	91	81	100	70	92.31
Hospital	3	1	5	3	1	2	3	1		13			2.20
University		1	1	2		1							0.53
Government									9				0.07
Armed Forces	1	1		1	1			2		3			0.85
Manufacturing	1	1	3	3	3	8	3	1		3			3.29
Organizations						1	1	1					0.19
Outside Prof.)													
Not stated)	2	1	1	1	1		2					30	0.56
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	471	399	415	357	2,082	680	86	139	11	31	3	10	4,684
Female:													
Retail	94	85	72	47	72	36	80	63	67	100		40	72.32
Hospital	4	15	26	53	25	49	20	31	33			20	24.17
University			2		1	2							0.78
Government	1												0.20
Armed Forces						2		6					0.39
Manufacturing						9							0.97
Organizations													
Outside Prof.)													
Not stated)	1				2	2						40	1.17
Total	100	100	100	100	100	100	100	100	100	100	—	100	100.0
Number Respondents	67	72	53	17	220	47	10	16	3	3	—	5	513
Number Respondents Not Stating Sex	39	22	44	34	248	54	9	12	3	1	—	9	475
Total:													
Retail	93	94	89	89	90	86	90	92	82	83	100	67	90.64
Hospital	3	3	7	6	4	5	5	5	12	11		4	4.25
University			1	1	1	1							0.56
Government	1								6				0.07
Armed Forces	1	1	1	1	1			1		3			0.76
Manufacturing	1	1	2	3	3	7	3	1		3			2.89
Organizations						1	1	1					
Outside Prof.)													
Not stated)	1	1					1					29	0.65
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number of Respondents	577	493	512	408	2,550	781	105	167	17	35	3	24	5,672

Source: Individual Pharmacist Survey, conducted as part of this study, 1962.

TABLE 46

DISTRIBUTION OF PHARMACISTS IN SAMPLE BY FIRST EMPLOYMENT IN PHARMACY AND CURRENT EMPLOYMENT, 1962

Category of Employment in Pharmacy	Pharmacists in Sample		
	First Employment		Current Employment
	Per Cent		
Retail	90.64		79.60
Hospital	4.25		6.80
University	0.56		1.06
Government	0.07		0.44
Armed Forces	0.76		0.88
Manufacturing	2.89		7.17
Organizations	0.18		0.25
Retired			1.04
Outside Profession)			0.95
Not stated)	0.65		1.81
Total	100.00		100.00
Number of Respondents		5,672	

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 47

DISTRIBUTION OF PHARMACISTS BY PROFESSIONAL MOBILITY SINCE FIRST EMPLOYMENT IN PROFESSION, BY SEX

Sex and Professional Mobility Factor	Province of Residence												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Male													
Current employment in same broad field as first employment	65	70	64	64	56	65	64	69	56	57	25	53	65.7
Not in same broad field	32	29	34	33	31	32	34	28	33	37	75	30	31.6
Unstated	3	1	2	3	3	3	2	3	11	6		17	2.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	549	428	300	315	2,076	709	80	141	9	30	4	43	4,684
Female													
Current employment in same broad field as first employment	57	47	55	47	52	59	60	47	100	100		56	53.4
Not in same broad field	38	50	43	47	46	39	40	53				38	43.7
Unstated	5	3	2	6	2	2						6	2.9
Total	100	100	100	100	100	100	100	100	100	100		100	100.0
Number Respondents	74	72	40	17	205	44	5	17	3	2	—	34	513
Number Respondents sex unstated	51	25	30	34	235	59	5	15	3	1	—	17	475
Total													
Current employment in same broad field as first employment	62	66	63	63	65	64	63	65	73	61	25	50	64.0
Not in same broad field	34	32	35	33	32	33	34	32	20	33	75	28	32.7
Unstated	4	2	2	4	3	3	3	3	7	6		22	3.3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

D. QUALIFICATIONS OF PRESENT MANPOWER IN PHARMACY

In this section both academic and licensing qualifications of present pharmacists are examined.

Table 48 provides a distribution of pharmacists by the highest university degree held. From this it will be noted that 13.9 per cent of pharmacists are practising without the benefit of a university degree of any kind. This is not surprising in that

it is a reflection of the fact that at one time formal education in pharmacy was undertaken by the profession itself in the provinces of Canada, outside of university facilities. In some cases a degree was available from an affiliated university on the successful completion of an extra set of examinations but this degree was not a prerequisite to licensing in pharmacy. All a candidate had to do to be licensed was to complete the course prescribed and administered by the licensing body in his province. Many did not bother to write the extra exams and, indeed, in many cases such exams were not available to them, with the result that they became pharmacists without a formal university degree. Some of these people remain in the profession to the current time but will decrease in number from year to year. The proportion of pharmacists with no degree is higher in the Maritime Provinces where a degree course has been in effect for a relatively short period of time. In Newfoundland, formal training in pharmacy is to this day administered by the licensing body and this is reflected in the fact that 76 per cent of pharmacists in that province do not possess a degree. In all provinces save Newfoundland, a university degree in pharmacy is now required for entry to the profession so that the number of practitioners with no degree will decrease with time.

It is obvious from the results that respondents to the Pharmacist Survey confused the possession of an undergraduate degree in pharmacy with other degrees at the bachelor's level, for it seems unlikely that 16.9 per cent of pharmacists would hold another bachelor's degree in addition to that in pharmacy. However, it cannot be assumed that all or even the majority who answered in this way did so because of misinterpretation and therefore it must be conceded that a considerable number of pharmacists hold additional undergraduate degrees. The relatively high proportion of these people in the Province of Quebec is probably a reflection of the fact that many preparatory colleges in that province grant such degrees.

Almost one out of every twenty pharmacists has gained a degree higher than his undergraduate degree in pharmacy. It must be pointed out that this proportion is of current practitioners, many of whom had no opportunity for degree advancement in Canada. With the advent of more comprehensive undergraduate courses and with the relatively recent introduction of graduate programmes in Canadian schools of pharmacy, it is to be expected that this proportion will rise considerably as the years pass.

Highly technical branches of the profession such as employment in university faculties and in manufacturing are, as would be expected, more accessible to pharmacists who hold a university degree. *Table 49* points this fact out quite clearly in that 1.3 per cent of degreed pharmacists find employment in universities while next to none of those without a degree are so employed. In the field of manufacturing, while 7.6 per cent of degreed pharmacists find employment here, only 4.7 per cent of those with no degree have a position in this area. Indeed, all of those employed in the field of research with manufacturers have a university degree. Those pharmacists without a degree tend more heavily toward practice in retail or hospital where their license is a sufficient credential.

Table 50 provides a distribution of pharmacists on the basis of their licensure status. It is surprising that only 5.4 per cent have never been licensed when it is considered that a license is necessary only for the retail practice of pharmacy, and, in a relatively few cases, for hospital practice as well. The great bulk, or 86.8 per cent, of pharmacists were fully licensed at the time of the survey in 1962, while a further 1.9 per cent had been licensed at one time but had allowed their licenses to lapse.

There is a slightly lessened tendency to maintain a professional license as pharmacists advance in degree status. *Table 51* indicates that although over 90 per cent of those with either no degree or an undergraduate degree in pharmacy presently maintain a license, only 61.7 per cent of those with a Masters degree and 81.3 per cent of those with a Doctorate do so. Since it is very unlikely that those with higher degrees practise in the retail branch of the profession, perhaps this is understandable. However, the fact that 23.4 per cent of those with a Masters degree have never been licensed, even though their employment has never required it, points up a serious lack of communication between these people and their professional licensing bodies. These persons who have extra academic achievement and therefore extra talents to devote to the profession and its organizations have not seen fit to do so in many cases. The fault may lie with the licensing body in their province of practice for in some cases a license is not available to anyone who has not served a formal internship in the profession. The basic fallacy in requiring a research pharmacist to serve an internship for a period of a year or so in a retail or hospital pharmacy must be obvious. Some licensing bodies have waived internship for these people or made it possible for them to serve a period of internship in a laboratory or university faculty. These steps are only common sense, but the relatively large proportion of these persons who do not maintain a license is evidence that much more should be done to bring them closer to their professional organizations.

As we have seen, Canadian pharmacists are a relatively well educated group of persons and vastly improved educational facilities and standards will tend to sharply elevate the qualifications of this group in the immediate future.

TABLE 48

ACTUAL AND PERCENTAGE DISTRIBUTION OF PHARMACISTS IN SAMPLE BY HIGHEST DEGREE HELD, 1962

Highest University Degree Held	Province of Current Practice												Canada
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	
	Numerical Distribution												
No degree...	213	52	65	54	238	25	42	44	9	25	2	21	790
Pharmacy Degree ...	381	403	240	277	1,866	245	31	100	4	6	1	47	3,601
Other Bachelors.	58	51	42	22	331	402	10	21	1	1	1	16	956
M.D.....	1	3	2		1	2	1	1					11
Masters.....	7	5	9	7	29	110		3				5	175
Doctorate ...	4	5	5	2	21	19	1	2					59
Not stated ..	10	6	7	4	30	9	5	2	1	1		5	80
Total.....	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672
	Percentage Distribution												
No degree...	32	10	18	15	9	3	47	25	60	76	50	23	13.9
Pharmacy ...	57	77	65	76	75	30	34	58	27	18	25	50	63.5
Other Bachelors.	8	9	11	5	13	50	11	12	7	3	25	17	16.9
M.D.....		1	1				1	1					0.2
Masters.....	1	1	2	2	1	14		2				5	3.1
Doctorate ...	1	1	1	1	1	2	1	1					1.0
Not stated ..	1	1	2	1	1	1	6	1	6	3		5	1.4
Total.....	100	100	100	100	100	100	100	100	100	100	100	100	100.0

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 49

ACTUAL AND PERCENTAGE RELATIONSHIP OF PHARMACISTS IN SAMPLE BETWEEN PHARMACY DEGREE STATUS AND CURRENT FIELD OF PHARMACY, 1962

	Pharmacy Degree Status of Pharmacists											
	Degree		No Degree		Not Stated		Total		Degree		No Degree		Total	
	Numerical Distribution								Percentage Distribution					
Retail:		3,620		614		280		4,514		79.4		80.0		79.6
Owner and Manager	2,027		371		167		2,565		44.5		48.3		45.2	
Owner only	254		27		17		298		5.6		3.5		5.3	
Manager only	509		75		35		619		11.1		9.8		10.9	
Employee	830		141		61		1,032		18.2		18.4		18.2	
Hospital:		304		61		21		386		6.7		8.0		6.8
Administration	8		3		3		14		0.2		0.4		0.3	
Chief Pharmacists	148		34		6		188		3.3		4.5		3.3	
Employee	148		24		12		184		3.2		3.1		3.2	
University:		59		1				60		1.3		0.1		1.1
Administration	11						11		0.3				0.2	
Teaching	33		1				34		0.7		0.1		0.6	
Research	15						15		0.3				0.3	
Government:		63		12				75		1.4		1.6		1.3
Armed Forces	42		8				50		0.9		1.1		0.9	
Research	1						1		0.1					
Administration	20		4				24		0.4		0.5		0.4	
Manufacturing:		347		36		24		407		7.6		4.7		7.2
Research	21				1		22		0.5				0.4	
Administration	56		5		5		66		1.2		0.6		1.2	
Production	52		2		1		55		1.1		0.3		1.0	
Sales	218		29		17		264		4.8		3.8		4.6	
Pharmacy Organization:		13		1				14		0.3		0.1		0.2
Administration	8		1				9		0.2		0.1		0.1	
Inspection	5						5		0.1				0.1	
Publications														
Retired		41		11		7		59		0.9		1.4		1.0
Outside Profession		42		11		1		54		0.9		1.4		1.0
Not stated		69		21		13		103		1.5		2.7		1.8
Total		4,558		768		346		5,672		100.0		100.0		100.0

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 50

ACTUAL AND PERCENTAGE DISTRIBUTION OF PHARMACISTS IN SAMPLE BY PROFESSIONAL LICENSING STATUS, 1962

Professional Licensing Status	Province of Current Practice												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Numerical Distribution												
Presently licensed....	643	479	345	335	2,337	432	87	161	14	30	4	53	4,920
Not licensed now but was at some time.	6	10	5	6	21	59		1				2	110
Never licensed....	4	15	5	6	57	213	1	1		2		3	307
Not stated ..	21	21	15	19	101	108	2	10	1	1		36	335
Total	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672
	Percentage Distribution												
Presently licensed....	95.4	91.2	93.2	91.6	92.9	53.2	96.7	93.0	93.3	90.9	100	56.4	86.8
Not licensed now but was at some time.	0.9	1.9	1.4	1.6	0.8	7.3		0.6				2.1	1.9
Never licensed....	0.6	2.9	1.4	1.6	2.3	26.2	1.1	0.6		6.1		3.2	5.4
Not stated ..	3.1	4.0	4.0	5.2	4.0	13.3	2.2	5.8	6.7	3.0		38.3	5.9
Total	100	100	100	100	100	100	100	100	100	100	100	100	100.0

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 51

ACTUAL AND PERCENTAGE RELATIONSHIP OF PHARMACISTS IN SAMPLE BETWEEN PROFESSIONAL LICENSING STATUS AND HIGHEST UNIVERSITY DEGREE HELD, 1962

Highest University Degree Held	Professional Licensing Status				
	Presently Licensed	Not Licensed now but was at Some Time	Never Licensed	Not Stated	Total
	Numerical Distribution				
No degree	714	8	23	45	790
Pharmacy degree	3,286	51	117	147	3,601
Other bachelors degree	698	39	117	102	956
M.D. or other profess.	9		2		11
Masters	108	9	41	17	175
Doctorate	48	3	6	2	59
Not stated	57		1	22	80
Total	4,920	110	307	335	5,672
	Percentage Distribution				
No degree	90.4	1.0	2.9	5.7	100.0
Pharmacy degree	91.3	1.4	3.2	4.1	100.0
Other bachelors degree	73.0	4.1	12.2	10.7	100.0
M.D. or other profess.	81.8		18.2		100.0
Masters	61.7	5.2	23.4	9.7	100.0
Doctorate	81.3	5.1	10.2	3.4	100.0
Not stated	71.2		1.3	27.5	100.0
Total	86.8	1.9	5.4	5.9	100.0

E. REMUNERATION OF CURRENT PHARMACY PRACTITIONERS

Canadian pharmacists are not a particularly affluent group of persons although the great majority of them are financially "comfortable". From *Table 52* it can be seen that the category of income common to the largest group of pharmacists, 30.2 per cent, is between $6,000 and $8,000 per year from all sources. This table which distributes pharmacists by income levels shows further that 57.7 per cent earn less than $8,000 per year and 76.0 per cent less than $10,000. A slight 6.7 per cent fall into the relatively affluent income categories of $15,000 or more. On the other hand, only 7.9 per cent earn under $4,000 a year.

Provincial variations in remuneration levels exist as evidenced by the following tabulation.

Province	Per Cent of Pharmacists with Yearly Earnings of $6,000 or less
Manitoba	22.9%
Ontario	23.2
Quebec	25.4
British Columbia	31.0
New Brunswick	31.9
Alberta	36.3

Province	Per Cent of Pharmacists with Yearly Earnings of $6,000 or less
Saskatchewan	37.1
Nova Scotia	37.6
Newfoundland	45.5
Prince Edward Island	60.0
CANADA	27.5%

In *Table 53* a distribution of pharmacists' yearly income levels has been linked to sex and age. Here we see that female pharmacists earn considerably less than males since 72.9 per cent of females earn $6,000 a year or less while only 22.4 per cent of males receive an income this low. At the other end of the scale, only 4.4 per cent of females earn a yearly income in excess of $8,000 while 43.4 per cent of male pharmacists reach this level of remuneration.

Age also has an effect upon the income level of pharmacists. If the proportion of pharmacists in each age group who earn over $6,000 per year is compared, it can be seen that from a level of 23.2 per cent in the 20 to 25 year age group, the proportion steadily rises to a high of 79.6 per cent in the 41 to 45 year group and then steadily declines again as age increases. There are relatively slight differences in the income levels of pharmacists between the ages of 36 and 55 years, this being the peak earning period.

Income depends also upon the field of pharmacy in which the pharmacist practises. *Table 54* relates this factor to income and shows that hospital pharmacy is by far the poorest paying branch of the profession. For example, while 57 per cent of hospital pharmacists earn less than $6,000 yearly, only 11 per cent of those in manufacturing, 13 per cent of those in government service, 26 per cent of those in retail and 31 per cent of those in universities receive this low an income. The broad area of manufacturing pharmacy produces the greatest financial rewards with 55 per cent of its pharmacist employees receiving incomes in excess of $8,000 while 47 per cent of those in universities, 41 per cent of those in retail, 23 per cent of those in government service and only 6 per cent of those in hospitals are paid as well.

Those attaining higher university degrees, it seems, gain very little monetary advancement as a result until they reach the level of a Doctorate. In distributing income levels of pharmacists according to degree level, *Table 55* shows that 37 per cent of those with undergraduate degrees in pharmacy and exactly the same proportion of those with Masters degrees earn over $8,000 a year. Of those attaining Doctorates, 54 per cent earn this level of income. In making such a comparison, it should also be kept in mind that the figures for undergraduate degreed pharmacists include some very young pharmacists just embarking upon their careers and who would, due to their age, be earning smaller incomes. On the other hand, the attainment of a higher university degree decreases the possibility of beginning practice at quite so early an age. It is therefore possible that if the younger age groups were eliminated from the distribution for undergraduate degreed pharmacists, the proportion of the remainder in the higher income categories would increase making such a comparison with those of advanced degrees less favourable to those with higher academic achievement.

TABLE 52

DISTRIBUTION OF PHARMACISTS IN THE SAMPLE BY INCOME LEVELS, BY PROVINCE OF CURRENT PRACTICE, 1962

Category of Yearly Income (All Sources)	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Per Cent												
Under $ 2,000	3.0	3.4	3.5	1.9	2.5	1.5	1.2	1.1	6.7	6.1		10.8	2.6
$ 2,000 – $ 4,000	5.8	7.3	7.6	3.8	4.3	4.9	3.4	6.4	33.3	6.1		14.0	5.3
$ 4,000 – $ 6,000	22.2	25.6	26.0	17.2	16.4	19.0	27.3	30.1	20.0	33.3		11.8	19.6
$ 6,000 – $ 8,000	35.2	28.1	26.8	36.9	32.4	24.3	31.8	20.8	6.7	15.1	75.0	10.7	30.2
$ 8,000 – $10,000	14.9	13.8	14.4	21.3	20.5	20.2	14.8	15.6	13.3	15.2	25.0	7.5	18.3
$10,000 – $15,000	14.3	14.3	12.5	12.0	15.2	16.4	15.9	16.2	20.0	12.1		5.4	14.7
$15,000 – $20,000	1.8	4.2	4.6	2.5	4.2	7.4	2.3	5.2		3.0		1.1	4.2
$20,000 – $30,000	0.9	1.2	1.3	0.8	1.4	1.6	1.1	2.3		6.1			1.3
$30,000 – $40,000	0.3	0.4	1.1	0.8	0.4	1.0	1.1	0.6					0.5
$40,000 – $50,000	0.2	0.2			0.2	0.4							0.2
$50,000 – $75,000			0.3	0.3	0.1	0.4						1.1	0.2
Over $75,000			0.3			0.1							0.1
Not stated	1.4	1.5	1.6	2.5	2.4	2.8	1.1	1.7		3.0		37.6	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Respondents	670	523	369	366	2,510	811	88	173	15	33	4	93	5,655

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 53

RELATIONSHIP BETWEEN YEARLY INCOME LEVELS AND SEX AND AGE OF PHARMACISTS IN THE SAMPLE, 1962

Sex / Years of Age	Yearly Income Levels — Dollars														
	Less Than $2,000	$2,000 to $4,000	$4,000 to $6,000	$6,000 to $8,000	$8,000 to $10,000	$10,000 to $15,000	$15,000 to $20,000	$20,000 to $30,000	$30,000 to $40,000	$40,000 to $50,000	$50,000 to $75,000	Over $75,000	Not Stated	Total	Number Respondents
	Per Cent														
Males															
Under 20	9.1	18.8	39.0	28.6	2.6	0.6							1.3	100.0	154
20 – 25	1.5	4.2	28.6	45.0	12.0	5.8	0.8	0.4					1.7	100.0	482
26 – 30	0.3	1.8	15.9	38.7	21.9	15.7	3.7	0.7			0.1		0.5	100.0	762
31 – 35	0.6	0.4	13.2	35.1	23.9	17.9	6.1	0.7	0.3		0.1		1.7	100.0	710
36 – 40	0.6	0.9	13.4	32.6	21.5	22.0	4.9	2.1		0.5	0.2		1.3	100.0	628
41 – 45	0.5	1.6	13.5	27.1	25.3	21.2	6.3	2.0	0.7				1.8	100.0	557
46 – 50	0.2	2.7	11.6	27.9	23.5	21.9	6.3	2.5	1.3		0.4		1.7	100.0	476
51 – 55	0.8	6.6	16.4	26.2	22.5	16.1	5.5	2.4	0.3			0.3	2.9	100.0	378
56 – 60	0.7	7.3	25.1	24.0	17.8	13.1	5.1	1.8	1.8	1.1		0.4	1.8	100.0	275
61 – 65	0.8	9.0	23.3	25.6	13.5	13.5	4.5	1.5	1.5			0.8	6.0	100.0	133
66 – 70	5.1	19.3	31.1	15.1	6.7	9.3	1.7			0.8			10.9	100.0	119
Over 70	1.0	3.7	17.7	32.3	20.3	16.3	4.6	1.4	0.5	0.1	0.1	0.1	1.9	100.0	
Total															
Number Respondents	47	174	826	1,511	947	762	214	64	25	7	5	3	89		4,674
Females															
Under 20	100.0													100.0	1
20 – 25	16.0	32.0	43.0	7.0						1.0			1.0	100.0	100
26 – 30	20.5	14.5	41.0	13.2	1.2				1.2				8.4	100.0	83
31 – 35	33.7	8.4	31.6	12.6	3.2		1.1		1.0				8.4	100.0	95
36 – 40	16.9	13.0	28.5	27.3	1.3	1.3		1.3					10.4	100.0	77
41 – 45	11.9	16.7	33.3	14.3	9.5	2.4	2.4						9.5	100.0	42
46 – 50	11.8	29.4	35.3	11.8	2.9								8.8	100.0	34

51 – 55	3.2	22.6	38.7	16.1								19.4	100.0	31
56 – 60	4.5	27.3	45.5	9.1	4.5							9.1	100.0	22
61 – 65	11.1	16.7	22.2	22.2	5.6						5.5	16.7	100.0	18
66 – 70		33.4	33.3	33.3									100.0	3
Over 70		50.0						25.0				25.0	100.0	4
Total	18.0	19.2	35.7	14.3	2.4	0.4	0.4	0.4	0.4	0.2	0.2	8.4	100.0	
Number Respondents	92	98	182	73	12	2	2	2	2	1	1	43		510
Number Respondents Sex Unstated	9	30	102	126	77	66	23	8	3	1	2	24		471
Under 20	100.0												100.0	1
20 – 25	12.0	23.7	39.9	20.5	1.9	0.4				0.4		1.2	100.0	258
26 – 30	4.3	5.5	30.4	40.3	10.8	4.9	0.7	0.3	0.2			2.6	100.0	576
31 – 35	4.0	2.5	17.7	35.5	20.0	14.2	3.3	0.5	0.7		0.1	1.5	100.0	882
36 – 40	2.1	1.6	14.8	34.4	21.8	16.1	5.4	0.9	0.2		0.1	2.6	100.0	815
41 – 45	1.3	2.0	15.4	31.2	20.5	20.4	5.0	2.0		0.4	0.1	1.7	100.0	706
46 – 50	1.2	3.4	14.8	27.2	23.0	20.1	5.6	1.8	0.8			2.1	100.0	657
51 – 55	0.5	4.0	14.3	27.2	21.3	19.7	6.1	2.4	1.0		0.4	3.1	100.0	574
56 – 60	0.8	7.4	18.3	24.6	21.6	16.0	5.7	2.3	0.2			2.9	100.0	487
61 – 65	1.4	8.1	23.7	25.1	16.2	12.3	5.0	1.4	1.7	0.8	0.6	3.4	100.0	358
66 – 70	0.5	11.1	24.4	25.5	12.8	11.7	3.3	1.1	1.1	0.6	0.6	6.7	100.0	180
Over 70	5.6	18.6	30.4	13.1	6.2	8.1	1.9	1.2	0.6	0.6		13.7	100.0	161
Total	2.6	5.3	19.6	30.2	18.3	14.7	4.2	1.3	0.5	0.2	0.2	0.1	2.8	100.0
Number Respondents	148	302	1,110	1,710	1,036	830	239	74	30	9	8	3	156	5,655

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 54

INCOME DISTRIBUTION OF PHARMACISTS IN SAMPLE ACCORDING TO PRESENT FIELD OF PHARMACY, 1962

Yearly Income Levels	Field of Pharmacy									
	Retail	Hospital	University	Government	Manufacturing	Organizations	Retired	Outside Profess.	Not Stated	Total
	Per Cent									
Less than $2,000	2	5	7				20	2	7	2.6
$2,000-$4,000	5	10	17	1	1		14	11	9	5.4
$4,000-$6,000	19	42	7	12	10	7	7	17	17	19.6
$6,000-$8,000	30	31	22	63	31	29	10	11	19	30.2
$8,000-$10,000	19	3	18	19	28	36	10	13	11	18.3
$10,000-$15,000	15	2	22	4	20	14	8	13	10	14.6
$15.000-$20,000	5	1	5		4		2	2		4.2
$20,000-$30,000	1		2		2			2	1	1.3
$30,000-$40,000	1				1	7		2		0.5
$40,000-$50,000								2		0.2
$50,000-$75,000										0.2
Over $75,000										0.1
Not stated	3	6		1	3	7	29	25	26	2.8
Total	100	100	100	100	100	100	100	100	100	100.0
Number Respondents	4,514	386	60	75	407	14	59	54	103	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 55

INCOME DISTRIBUTION OF PHARMACISTS IN SAMPLE ACCORDING TO HIGHEST UNIVERSITY DEGREE HELD, 1962

Yearly Income Levels	No Degree	Pharmacy Degree	Other Bachelors as Well	M.D.	Master's	Doctorate	Not Stated	Total
	Per Cent							
Less than $2,000	3	3	1	9	3	2		2.6
$2,000-$4,000	6	5	4	9	8	8	6	5.4
$4,000-$6,000	23	19	19	18	19	14	28	19.6
$6,000-$8,000	26	32	29	9	28	19	20	30.2
$8,000-$10,000	16	18	20	9	17	20	11	18.3
$10,000-$15,000	14	14	15	18	14	27	15	14.6
$15,000-$20,000	4	4	6		5	5	6	4.2
$20,000-$30,000	2	1	1		1			1.3
$30,000-$40,000	1		1			2		0.5
$40,000-$50,000								0.2
$50,000-$75,000							1	0.2
Over $75,000								0.1
Not Stated	5	4	4	28	5	3	13	2.8
Total	100	100	100	100	100	100	100	100.0
Number Respondents	790	3,601	956	11	175	59	80	5,672

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

F. SIGNIFICANCE OF IMMIGRATION OF PHARMACISTS

For purposes of this study, an immigrant pharmacist is defined as one who is both foreign born and who received his formal education in pharmacy prior to entering Canada. Thus, this term is applied only to those persons who were pharmacists at the time of their immigration into this country.

Of the 5,672 pharmacists who answered the Pharmacist Survey, 569 were foreign born. However, only 245 of these or 4.3 per cent of the total sample were educated as pharmacists before their entry to Canada.

Unfortunately, a distribution of immigrant pharmacists by country of origin is not available. This type of distribution of all foreign born pharmacists is available and appears as *Table 56*. From this it can be noted that the largest single group of 37.6 per cent have come from Great Britain. Another 36.7 per cent were born in other areas of Europe, while 16.9 per cent were born in the United States. A relatively small 6.9 per cent were born in areas of the world other than Europe or North America.

It is also interesting to note that 60 per cent of women who were foreign born came from areas of Europe other than Great Britain.

Although 44.4 per cent of respondents to the survey were currently located in Ontario, 52.0 per cent of foreign born pharmacists were located in that province. Similarly, British Columbia contributed 11.9 per cent of the response to the survey but 14.7 per cent of foreign born pharmacists currently practise in that province. It is, therefore, possible to conclude that foreign born pharmacists are attracted most strongly to these two provinces. While the greater percentage of those practising

in British Columbia are born in Great Britain, the largest proportion of foreign born pharmacists in Ontario were born in areas of Europe other than Great Britain.

Those pharmacists who were foreign born and educated in pharmacy prior to their entry into Canada are distributed according to years of residence in this country in *Table 57*. The very small proportion of this group which entered Canada between sixteen and twenty-five years ago reflects the fact that the Second World War was fought during this period. Immigration of pharmacists peaked immediately following the war with 31.8 per cent of current immigrants entering the country between eleven and fifteen years ago. Immigration has tailed off since this peak to the point that only 15.5 per cent of current immigrants have come to Canada in the last five years.

The acceptance or rejection of immigrants to licensing in pharmacy is, of course, the prerogative of the provincial licensing bodies. Basically these groups insist that the immigrant pharmacist, at the time of immigration, have academic qualifications at least equal to those required of new entrants to the profession within the province. There is no blanket reciprocity with any other country and each immigrant is judged on his individual merits. If an immigrant is judged by a licensing body to have at least equal academic qualification to current graduates within the province, he is usually required to pass special examinations in forensic pharmacy (basic knowledge of the laws governing the practice of pharmacy, both federal and provincial for the province of application for membership) only, and after a relatively short residence period is licensed. If, on the other hand, the immigrant's academic qualification is judged to be deficient in any respect, he is informed of those areas in which he must prove proficiency either through examination or satisfactory completion of courses within a school of pharmacy.

Since professional licensing is generally only required for the retail branch of the profession, there is nothing to prevent an immigrant pharmacist from practising within other areas of the profession without such certification. In these cases, it is the individual employer who judges the individual qualifications of each immigrant.

It is becoming more and more difficult for an immigrant pharmacist to obtain a licence in pharmacy in one of the provinces. As Canadian educational standards for pharmacists increase, there are relatively fewer immigrants who possess equal educational qualification. Increasingly, immigrants are required to take credits in Canadian universities prior to receipt of a licence. It is difficult to assess the effect that this will have on the flow of immigrants to Canada in this profession. It may be that the gross flow will not be affected but that more and more of these people will seek employment in areas of pharmacy which do not require them to be licensed. However, other fields of pharmacy are currently tightening their entrance qualifications. Before many years, any pharmacist who wishes to practise in a hospital may be required to possess a licence as is currently the case in Saskatchewan and British Columbia. If this trend becomes general for Canada, it would leave relatively few areas of the profession to which an immigrant could turn without possessing a licence.

In total, it must be assumed that present Canadian trends will have the effect of discouraging immigration of pharmacists to this country in the years to come.

TABLE 56

ACTUAL AND PERCENTAGE DISTRIBUTION OF FOREIGN BORN PHARMACISTS IN SAMPLE, BY SEX AND BIRTHPLACE, 1962

Sex / Country of Birth	Provinces of Current Practice												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Numerical Distribution												
Males													
U.S.A.	14	12	5	5	21	9	3	2	1			2	74
Gr. Britain	37	10	13	7	83	10	1	2		1		2	166
Other Europ.	8	5	2	14	90	19						1	139
" Non-"	9		3	1	19	2							34
Not stated			3		3	1							7
Total	68	27	26	27	216	41	4	4	1	1		5	420
Females													
U.S.A.		1	1	1	2			1					6
Gr. Britain	4	3			14							3	24
Other Europ.	1	4			35	8		1				5	54
" Non-"	1				2	1						1	5
Not stated				1									1
Total	6	8	1	2	53	9		2				9	90
Not Stated													
U.S.A.	2	2	2	1	6		1					2	16
Gr. Britain	8		1	2	10	1						2	24
Other Europ.			1	1	10	4							16
"Non-"													
Not stated					1							2	3
Total	10	2	4	4	27	5	1					6	59
Totals													
U.S.A.	16	15	8	7	29	9	4	3	1			4	96
Gr. Britain	49	13	14	9	107	11	1	2		1		7	214
Other Europ.	9	9	31	15	135	31		1				6	209
" Non-"	10		3	1	21	3						1	39
Not stated			3	1	4	1						2	11
Total	84	37	31	33	296	55	5	6	1	1		20	569
	Percentage Distribution												
Males													
U.S.A.	21	44	19	19	10	22	75	50	100			40	17.6
Gr. Britain	54	37	50	26	38	25	25	50		100		40	39.5
Other Europ.	12	19	8	51	42	46						20	33.1
" Non-"	13		12	4	9	5							8.1
Not stated			11		1	2							1.7
Total	100	100	100	100	100	100	100	100	100	100		100	100.0
Females													
U.S.A.		13	100	50	4			50					6.7
Gr. Britain	67	37			26							33	26.7
Other Europ.	17	50			66	89		50				56	60.0
" Non-"	16				4	11						11	5.5
Not stated				50									1.1
Total	100	100	100	100	100	100		100				100	100.0
Totals													
U.S.A.	19	41	26	21	10	16	80	50	100			20	16.9
Gr. Britain	58	35	44	27	36	21	20	33		100		35	37.6
Other Europ.	11	24	10	46	46	56		17				30	36.7
" Non-"	12		10	3	7	5						5	6.9
Not stated			10	3	1	2						10	1.9
Total	100	100	100	100	100	100	100	100	100	100		100	100.0

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 57

FOREIGN BORN AND EDUCATED PHARMACISTS IN THE SAMPLE, BY YEARS OF RESIDENCE IN CANADA, 1962

Years of Residence in Canada	Foreign Born and Educated Pharmacists
	Per Cent
Less than 5 years	15.5
6-10 years	24.9
11-15 years	31.8
16-20 years	3.7
21-25 years	2.9
Over 25 years	21.2
Total	100.0
Number of Respondents	245

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

G. EMIGRATION OF CANADIAN PHARMACISTS TO THE UNITED STATES

Until relatively recent years, Canadian pharmacists in search of advanced academic qualification had to pursue higher degrees outside of Canada. Most went to the United States. On completion of their graduate studies, many found that opportunities for employment of their training were more abundant in the United States than they were in Canada. Pharmaceutical manufacturers in Canada are largely subsidiaries or affiliates of huge American concerns who, for reasons of economy and efficiency, concentrated their research and product development efforts in the United States. American colleges of pharmacy, with relatively highly developed research and graduate studies facilities afforded more opportunity for those interested in employment in this field.

The recent development of graduate programmes in Canadian schools of pharmacy has served both to keep Canadians in this country during the pursuit of higher academic achievement and to provide employment for those who have obtained advanced degrees. However, some students still seek advanced education in the United States. During the academic year 1962 – 1963, thirteen Canadian pharmacy graduates were enrolled in post-graduate courses of American universities.[1]

Canadian manufacturing facilities are developing slowly and every year employ more pharmacists with advanced degrees in the fields of research and product development. However, basic Canadian dependency on foreign based research is likely to continue with relatively slight abatement for many years to come. American opportunities in this field will thus continue to lure highly skilled Canadians to that country.

[1] *Directory of Canadians Studying in the United States*, Economics and Research Branch, Department of Labour, Canada, 1962–1963.

On balance, more opportunities presently exist for employment of pharmacists with advanced degrees in the United States although each year sees Canadian opportunities for these people increase.

Opportunities in the United States for Canadians with a basic undergraduate degree in pharmacy are related largely to the attitude of the various state licensing bodies toward pharmacists educated outside of the state. Generally speaking, Canadians have an equal opportunity to apply for licensure in most states as any pharmacist educated in another state of the Union. In each case educational requirements are predicted on the level of academic achievement required of new entrants to the profession within the particular state. As educational facilities differ, so do educational requirements for entry between one state and another. For the Canadian pharmacist who either holds or is willing to acquire the prerequisites to entry of the profession in a particular state, comparative levels of earnings between the two countries would contribute largely to the decision of whether to move or not.

Canadian pharmacists earn less on the average than do their American colleagues. *Table 58* compares earnings levels in the two countries for the year 1962 and indicates that although 27.5 per cent of Canadian pharmacists earn less than $6,000 yearly, only 17.8 per cent of American pharmacists have an income this

TABLE 58

COMPARATIVE EARNINGS OF PHARMACISTS IN CANADA AND U.S.A., 1962

Canada[1]		United States[2]	
Levels of Income 1961	Per Cent	Levels of Income 1961	Per Cent
Under $2,000	2.6		
$2,000 – $4,000	5.3	Under $5,000	9.7
$4,000 – $6,000	19.6	$5,000 – $5,999	8.1
$6,000 – $8,000	30.2	$6,000 – $7,999	28.3
$8,000 – $10,000	18.3	$8,000 – $9,999	22.3
$10,000 – $15,000	14.7	$10,000 – $14,999	21.6
$15,000 – $20,000	4.2	$15,000 – $19,999	6.0
Over $20,000	2.3	$20,000 and over	4.0
Income not stated	2.8		
Total	100.0	Total	100.0
Sample size	5,655	Sample size	2,948
Median Earnings Level[3]	Between $6,000 and $8,000	Median Earnings	$8,310

[1] Individual Pharmacist Survey conducted as part of this study, 1962.

[2] Sample Survey of Pharmacists conducted by U.S. Department of Health, Education, and Welfare, 1962, and reported in Health Manpower Source Book Number 15 of the Public Health Service, 1962.

[3] Actual earnings not determined in survey.

low. Similarly, American pharmacists earning over $10,000 yearly comprise 31.6 per cent of the total while only 24.2 per cent of Canadian pharmacists earn this much.

Opportunities of higher income exist in the United States and it is, perhaps, to be expected that a leakage of Canadians to this more lucrative area will continue as long as this situation exists.

Both more diverse opportunities and higher rates of income are compelling stimuli to emigration of Canadian pharmacists, at all degree levels, to the United States.

CHAPTER 4

DEMAND FOR PHARMACISTS IN CANADA

A. FACTORS AFFECTING DEMAND

1. Trends in Technology

Today, the manufacture of medicinal agents, due to its growing complexity, is largely accomplished by pharmaceutical manufacturers. Relatively little actual fabrication is required of the modern pharmacist in the retail or hospital pharmacy when his role is compared to that of his forerunners in the profession. It is obvious that a trend such as this would shorten the average time required in a pharmacy to dispense a prescription. The pharmacist's medicinal supplies are now largely in a form, if not quantity, suitable for dispensing. At first inspection, this would lead one to believe that fewer retail and hospital pharmacists would be required to fulfil the needs of Canadian communities. However, if the time required to fulfil each prescription service has lessened, the time required for maintenance of service has increased manyfold. For this trend toward industrial manufacture of drugs has led, also, to a greatly increased complexity and proliferation of medicinal products. The modern pharmacist must procure and maintain an extensive inventory of drugs, many of which require special handling and storage. He must spend time in keeping abreast of the many new developments which occur, seemingly, every day. He must be ready to provide precise information on all sorts of medication to an enquiring physician or must be able to explain the use of a home remedy to an uncertain customer. The pharmacist's service has not, then, become less time consuming, it has simply changed in character.

There is, today, intense competition in the pharmaceutical industry. Possibly the most important effect of this competition is the advances in drug therapy that have been developed as a result. If new products are the life blood of the industry, they are also the life blood of competition within it. There is a constant stimulus to produce a new remedy that can be considered an advance upon those already on the market for a similar use. Having developed such a product, a manufacturer is unable to diminish his research effort because, in every likelihood, one of his competitors will, in turn,better the product that he has developed. And so the round continues. To further complicate the proliferation to which this leads, manufacturers are prone to copy products of competitors and to issue multiple forms of successful products. This practice, often referred to as regrettable or unnecessary duplication,

has many advantages. It spurs the original manufacturer on to greater discovery, since he cannot retain product exclusivity for long; it allows the medical practitioner a choice in prescribing a particular curative agent; it provides sufficient forms of a drug that usually an ideal one can be found for each patient with each particular condition and, finally, it exerts a competitive effect on price of the particular medication.

However, in the eyes of the retail or hospital pharmacist, it has disadvantages as well. It leads to a tremendous duplication in inventories, and both the growing complexity and proliferation of drugs greatly extend the knowledge and technical skill required of the practising pharmacist. Today, there are literally thousands of drugs and dosage forms thereof on the Canadian market. The Compendium of Pharmaceutical Specialties lists over 8,000, and more appear every year.[1] Paul de Haen, in his "New Product Parade 1962", states that 1962 saw the introduction of 28 new single chemical entities, 47 duplicate products, 180 compound products and 84 new dosage forms.[2] He goes further to state that this is the lowest number recorded since 1948 which was the first year that accurate data were available. Mr. de Haen also states that 1962 saw the discovery of 620 new synthetic compounds or plant constituents which are reported as having some therapeutic activity, but which are still in the research stage.

This high degree of activity in product introduction affects pharmacy manpower in a variety of ways. Of course, greater numbers of skilled personnel are required in research, product development, quality control and production capacities in the pharmaceutical industry. A considerable portion of these are drawn from pharmacy, both with advanced academic training and without. The manufacturers have need of more and more medical detail personnel and it is becoming imperative that such personnel have training in pharmacy or at least a related science, in order to better understand the more complex products of modern manufacturing.

As mentioned previously, this growing complexity and proliferation demand more of the time of the pharmacist practising in hospital or simply keeping himself informed. It has demanded greater skills of those teaching within the schools of pharmacy. Indeed, it has required more skill from pharmacists in every aspect of professional practice.

2. Public Attitudes Toward Health, Illness and Drugs

While drugs have been becoming more complex, they have also become a great deal more effective. This factor, along with advances in medical and surgical procedures, has produced miracles of a decade ago that are accepted as commonplace today. The Canadian public, along with most of the world, have come to expect the relief and cures that modern drugs can produce. The warmed honey for cough and sponge bath for fevers of a generation ago have almost completely been replaced

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[1] Compendium of Pharmaceutical Specialties and Supplements thereto, published by the Canadian Pharmaceutical Association, 1960.

[2] de Haen, Paul, New Product Parade 1962, Drug and Cosmetic Industry, 92, 2 February 1963.

by the scientifically formulated caugh mixtures and antipyretics of today. Even the application of mustard plasters has almost disappeared in the modern household. The dependency on drugs in the treatment of serious and not so serious conditions has become universal. After all, why should one suffer the discomfort of a headache when a tablet or two will dispel it, or at least make it more bearable? Why should a person spend a week or two in bed getting rid of an infection when an antibiotic will clear it up in a few days? Today, the public wishes to be restored to health both quickly and efficiently. Modern drugs, in many cases, accomplish just this and, when required, have become as necessary to the public as food or drink. This factor has led to an increased utilization of drugs which will be shown presently in this study.

Newer drugs have become increasingly popular topics for articles in the daily press and magazines, and it is an odd evening, indeed, when reference to drug therapy is not made during the course of television entertainment. As a result, the Canadian public has become increasingly interested in drugs to which they often attribute miracle cures to conditions which, more miraculously, often conform to the same types of symptoms as they, themselves, experience. This less than adequate knowledge, or worse still, mis-information, concerning drugs, in some cases leads patients to request prescriptions from their physician or to try to procure an unneeded drug from their pharmacist. This phenomenon is cited only as evidence of the growing acceptance of drug therapy which has led to an increased utilization of drugs.

3. Trends in the Use of Drugs

While the average Canadian utilized 2.21 prescriptions during 1951, nine years later, in 1960, this figure became 2.41 or 9.5 per cent higher. Over this same period, the total value of prescriptions dispensed in this country rose 152.1 per cent from $52,010,574 in 1951 to $131,092,880 in 1960.[1] We have seen that increased public confidence in medicinals has contributed to this substantial rise in utilization. But other factors have exerted a substantial effect, also.

Due in large measure to the very existence of new and more efficient drugs, the age structure of the Canadian population is changing. A high birth rate together with a low death rate among children added, between 1951 and 1956, nearly 1,000,000 to the population under 15 years of age and raised the proportion of this group to the total population from 30.3 per cent to 32.5 per cent. In this same six-year period, persons over 75 years of age increased by 21.2 per cent, while the total population increased by only 14.8 per cent.[2] Thus, the very young and the very old are becoming a larger proportion of total population. Elderly persons with a relatively high incidence of chronic and debilitating conditions, and children with a high incidence of childhood communicable diseases, are among the greatest users of medication. Therefore, the drug industry which may assume a portion of the credit

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[1] Brief of the Canadian Pharmaceutical Association to the Royal Commision on Health Services, 1962, p. 123.

[2] Canada Year Book 1960, p. 188.

for reducing child mortality and for increasing the life span, is in the enviable position of having created a substantial market for its products as a result. It is obvious that these trends would exert an effect that would tend to increase the per capita consumption of drugs.

Canada, it seems, is becoming increasingly urban in character. While 56.68 per cent of Canadians resided in urban areas in 1951, 57.75 per cent did so in 1956.[1] The Urban Family Expenditure 1959 report published by the Dominion Bureau of Statistics in March of 1963 shows that the average urban family spent $29.80 on prescription drugs during 1959 and that the average family size was 3.3 persons. This gives a per capita outlay on prescription drugs by urban persons during 1959 of $9.03.[2] Based on a population, that year, of 17,483,000[3] and total value of prescription services of $130,871,483,[4] the average per capita expenditure on prescription drugs in 1959 was $7.49. It is, then, clear that urban persons utilize more prescription services than do rural persons, and the trend toward urbanization would influence total utilization of these services.

The growth in the value of drugs consumed by the Canadian public has stimulated, through its effect on sales, a corresponding growth in the pharmaceutical manufacturing industry. This growth has led to an increased demand within the industry for trained personnel. Pharmacists at all levels of academic achievement have been sought in increasing numbers for employment within the industry.

The growth in per capita utilization of prescription services has served to increase the demand on the time of the pharmacist who is employed in retail or hospital practice.

4. Population Trends

It was noted in Chapter 2 that the number of retail pharmacies in Canada has not grown at a rate that equals that of population expansion.[5] This has served to place greater professional demands upon the retail pharmacy of today. For, with increasing consumption of prescriptions per capita and also increasing numbers of persons served by the average pharmacy, it is inevitable that the average pharmacy dispenses more and more prescriptions as these trends continue.

5. Government Control over the Sales of Pharmaceuticals

The Department of National Health and Welfare has, over the past years, been assuming a greater degree of control over the sales of pharmaceutical products at

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[1] *Ibid.* p. 180.

[2] *Urban Family Expenditure 1959*, Dominion Bureau of Statistics, March, 1963.

[3] Dominion Bureau of Statistics Estimate.

[4] Brief of the Canadian Pharmaceutical Association to the Royal Commission on Health Services, 1962, p. 123.

[5] See Table 5.

all levels of distribution. Not too many years ago the responsibilities for the control and inspection required in the sale of narcotic drugs was moved from the Royal Canadian Mounted Police to a new Division of Narcotic Control within the Federal department. Since then, this department has had its area of responsibility broadened to include a category of Controlled Drugs (barbiturates and emphetamines) in addition to narcotics. The subsequent desire of this division for pharmacists to serve in the capacity of inspectors has increased many times. Control of other classifications of drugs at the provincial level has also increased with a corresponding need for larger inspection staffs.

The effect of this increased control upon retail and hospital pharmacy practitioners has been substantial. The volume of records which must be kept today is substantially greater than that of even 5 years ago. Detailed accounts of all purchases and sales of a wide assortment of drugs must be maintained, thus placing a substantial demand on the time of practising pharmacists.

Increased Federal control over the manufacture and distribution of pharmaceuticals has stimulated an increased awareness of the need for comprehensive quality control procedures within the industry, although, in all fairness it must be admitted that the quality control exercised by many manufacturers surpasses that which is required of them by law. Pharmacists are increasingly in demand for employment in this area.

6. Possible Growth in Insured or Prepaid Pharmaceutical Services

The growth of insurance or prepayment plans, whether voluntary or compulsory and whether administered by a government or private insuring agency, would have a dramatic effect upon the level of prescription services desired by the Canadian people. The increased utilization of these services, which springs from the existence of insurance, could be documented in reference to foreign lands whose governments involve themselves in the provision of drugs. Canadian experience in this line can be cited from the experience of the Green Shield Prescription Plan located in Windsor, Ontario. This plan, which is unique in Canada in that it provides first dollar coverage for the prescription requirements of its subscribers, finds it necessary to charge, as a premium, $4.45 per month for a family consisting of two adults and one child. This would give a yearly figure of $53.40 for such a family, and they are still required to pay a utilization fee of 35¢ for each prescription service utilized. This figure compares to the average outlay in 1959 (and these Prescription Services rates were in effect that year) of $29.80 for an urban family of 3.3 persons, as cited in the Dominion Bureau of Statistics, Urban Family Expenditure 1959. The rates set by Prescription Services have by no means yielded a profit, and it is a matter of record that payments by the plan to pharmacists rendering services to beneficiaries have been discounted 20 per cent to keep the plan in operation.

It is clear that the emergence of any programme on a large scale which insured prescription services would very dramatically increase the demand for those services. In fact, the evidence seems conclusive that such a plan would almost immediately at least double the number and value of such services rendered to the beneficiaries of the plan.

If such a programme were implemented, it is obvious that dispensing pharmacists would both render more prescription services and become involved in a great deal more time consuming record keeping.

B. RETAIL PHARMACY

By far the majority of pharmacists have chosen the field of retail pharmacy in which to practise. *Table 59* provides a census of those engaged in this field during the year 1962. There were a total of 7,972 practising retail pharmacists in Canada during that year.

The retail pharmacist functions as a curious and quite unique individual. The functions he performs are sometimes professional, sometimes commercial, and often a mixture of both. For certain of his professional services such as the dispensation of prescriptions, he receives financial compensation, while for other functions in the professional area such as answering inquiries of physicians and advising customers on matters of health and hygiene, he receives no financial reward unless such consultation leads to a commercial transaction or to a professional prescription service. The response to the Pharmacist Survey indicates that professional services, generally, and the actual dispensing of prescriptions in particular, place the most important demands upon the time of the retail pharmacist. From *Table 60* it can be ascertained that about one-half of the total number of retail pharmacists spend over 25 per cent of their time in dispensing prescriptions. In comparison with the other functions itemized, this area places the greatest demand on the pharmacist's time, with about one-sixth of responding pharmacists devoting at least 50 per cent of their time to this function.

It is not the intention of this study to minutely analyse the utilization of the retail pharmacist's time. For the purposes of this study, it is sufficient to recognize the divergent interests of the retail pharmacist and to realize that his professional functions place more important demands on his time, in a general sense, than do his functions as a retailer. However, at the same time, it must also be recognized that the commercial functions of a retail pharmacist do place demands upon his time which prevent an optimum utilization of his professional talents for his total working hours.

Table 61 shows that the average Canadian pharmacist works 43.9 hours a week and dispenses 5,000 prescriptions a year, or 96.2 per week. From this, it can be calculated that the average pharmacist fills an average of 2.2 prescriptions for every hour spent in retail pharmacy. From this table, also, it can be seen that the average pharmacist strength of Canadian pharmacies is 1.9 and, because of the existence of multiple pharmacist units employing over two pharmacists, it can be assumed that a number of Canadian pharmacies employ the services of only one pharmacist.

Previously, *Table 2* has shown that there were 5,022 retail pharmacies in Canada in 1962. Further, in discussion of *Table 5*, it was pointed out that this number represented a population per retail pharmacy ratio of 3,698 which had increased from

3,317 in 1955. It is apparent, therefore, that the increase in the number of pharmacies over this period has not kept pace with population increases. Even in a period of relative economic prosperity, this indicates a consolidation of retail pharmacies into units which serve a greater number of persons.

Probably the greatest contributing factor to this phenomenon is the relative scarcity of professional manpower in this branch of the practice of pharmacy. Replies to the Pharmacist Survey would indicate, as set out in Table 62, that existing retail pharmacies would hire the services of 2,056 additional pharmacists were they available to them.

This 2,056 then represents the current demand for the services of retail pharmacists. But what of the future? If this current demand could in some manner be met, it would supply an additional 0.4 pharmacists per retail pharmacy in Canada and raise the average total for pharmacists per pharmacy to 2.3 for the country. This must, then, be considered what present owners and managers of retail pharmacies consider the optimum ratio of pharmacists to pharmacies.

Predictions of future demand, therefore, hinge primarily upon the number of retail outlets which will exist at any given time. Such predictions are complicated by the fact that it is obvious that the massive backlog of demand for pharmacists by existing outlets will act as a deterrent upon the establishment of new pharmacies. However, the restriction of supply has existed for a number of years so that it is fairly likely that the trend in retail pharmacy growth of the last eight years may be projected with reasonable accuracy into the future. On this basis, it could be expected that the number of retail pharmacies in Canada will increase at the rate of 41.4 per year and approximately equal 5,187 in 1965 and 5,415 in 1970. Assuming that the new pharmacies so formed will require the services of 2.3 pharmacists each, these new pharmacies will add 380 pharmacists to current demand for 1965 and an additional 522 pharmacists between 1965 and 1970. Thus, it could be expected that a 1962 demand for 2,056 pharmacists will become 2,436 by 1965 and 2,958 by 1970.

These demand figures do not take into account those that will be required as normal replacements for retiring pharmacists each year. In this study, we have chosen to treat replacement requirements as a negative factor in the supply of pharmacists and consideration of replacement rates will be found in the section of the study dealing with supply.

There is a distinct possibility that supply will restrict the demand for pharmacists beyond the predictions set out herein, through restricting net retail pharmacy formation to a rate which is less than that experienced between 1955 and 1962. Indeed, *Table 2* shows that five of the ten provinces experienced a decrease in number of pharmacies between 1955 and 1962. In Ontario, there were fifty less retail pharmacies in 1962 than there were two years earlier.

On the other hand, had supply of pharmacists been more liberal, the probability exists that the growth in the number of pharmacies over our trend period from 1955 to 1962 would have been greater.

Therefore, demand for retail pharmacists, as predicted in this section, assumes a rate of supply of pharmacists approximately equal to that between 1955 and 1962. The effect of supply upon demand in the future will be examined in a later chapter of this study.

Current rate of demand and that predicted for the future for the area of retail pharmacy is predicated also on the present requirements for retail pharmacists as expressed by owners and managers of present retail pharmacies. A re-allocation of professional time in retail pharmacy whereby the retail pharmacist devotes more of his time to the professional aspect of his practice and becomes decreasingly involved in the area of retail commerce, would have a depressant effect upon our stated requirements. This factor proves immeasurable and has, therefore, not been included in our calculations. As well, if the growth in pharmacy formation continues as predicted, at a rate which is less than anticipated growth in population, this, together with the growing per capita use of prescription drugs, will combine to force the retail pharmacist to devote a greater proportion of his time and effort to his professional functions.

Commercialism in retail pharmacy has been blamed for what has been described as an overabundance of retail pharmacies in that this aspect of retail practice allows two pharmacies to operate where there is enough professional practice only for one. This may be true, and certainly there is an overabundance of retail pharmacies in large metropolitan areas. But this same commercial aspect of the practice of retail pharmacy has allowed some outlets to locate in areas of our country which would be deprived of the services of a pharmacy were it unable to supplement the salary of the operator through commercial enterprise. The one effect is inseparable from the other. Were commercialism legislated away from retail pharmacy, another means would have to be found to subsidize the pharmacist in smaller communities which had a desire or need for his services.

TABLE 59

NUMBERS OF PHARMACISTS ENGAGED IN RETAIL PHARMACY DURING 1962

Province	Number of Pharmacists Engaged in Retail Practice During 1962
British Columbia	1,047
Alberta	690
Saskatchewan	484
Manitoba	534
Ontario	3,486
Quebec[1]	1,257
New Brunswick	143
Nova Scotia	207
Prince Edward Island	31
Newfoundland	93
CANADA Total	7,972

[1] News release of the Quebec College of Pharmacists, May 1963.

Source: Files of provincial licensing bodies in pharmacy.

TABLE 60

RETAIL PHARMACISTS
PER CENT OF TIME SPENT IN THE PERFORMANCE OF VARIOUS TASKS, 1962

Retail Pharmacists' Tasks	Percentage of Time Spent on Various Tasks					Total
	Less Than 25 Per Cent	26–50 Per Cent	51–75 Per Cent	76–100 Per Cent	0 Per Cent And Not Stated	
Filling prescriptions	44.8	32.9	12.3	3.6	6.4	100.0
Retail selling Non-prescription medicinals	74.9	15.1	1.4		8.6	100.0
Retail selling Non-medicinals	82.2	2.7	0.1		15.0	100.0
Management of personnel	81.4	0.7	0.1	0.1	17.7	100.0
Management of cash	84.1	1.0	0.2		14.7	100.0
Management of front store stock	83.0	1.6	0.1		15.3	100.0
Management of dispensary stock	88.3	0.3			11.4	100.0
Keeping informed on new drug developments	85.2	0.1			14.7	100.0
Providing professional information and advice	82.5	0.1			17.4	100.0
Research, product development and manufacturing	39.6	0.1			60.3	100.0
Operating business agencies	49.5	0.1			50.4	100.0

Number Respondents= 4,514

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 61

RETAIL PHARMACY
AVERAGE ANNUAL NUMBER OF PRESCRIPTIONS
AND WEEKLY PHARMACIST HOURS PER PHARMACY AND PHARMACIST, 1962

Retail Pharmacy	Province of Present Practice												Canada
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	
	Averages												
Total weekly pharmacist hours per pharmacy	84	78	74	79	84	89	96	87	85	86		78	83.5
Number pharmacists per pharmacy	2.2	1.5	1.5	1.7	1.8	1.1	1.3	1.1	1.2	1.4		1.8	1.6
Weekly hours per pharmacist	39.2	52.0	49.3	46.5	46.7	80.9	73.8	79.1	70.8	61.4		43.3	52.2
Annual number of prescriptions per pharmacy (thousands)	11.0	8.6	8.4	7.7	8.5	12.4	14.1	10.9	9.9	10.4		7.4	9.5
Annual number of prescription per pharmacist (thousands)	5.5	5.1	5.3	3.9	4.5	5.9	6.7	5.7	5.5	6.5		4.1	5.0
Total pharmacies reporting	288	271	206	186	1,228	411	55	101	8	22		11	2,787
Total retail pharmacies operating, 1962[1]	484	448	327	318	1,907	1,152	106	188	25	65	2		5,022
Sample as per cent of total population	59.5	60.5	63.0	58.5	64.4	35.7	51.9	53.7	32.0	33.8			55.5

[1] From files of Provincial Licensing Bodies.

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 62

RETAIL PHARMACY – CURRENT DEMAND FOR RETAIL PHARMACIES, 1962

Retail Pharmacy	Province of Current Practice												Canada
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	
	Numerical Distribution of Sample[1]												
Total pharmacies reporting	288	271	206	186	1,228	411	55	101	8	22		11	2,787
Additional pharmacists required by reporting pharmacists	66	59	36	47	447	289	34	48	4	13		3	1,046
	Total Retail Pharmacy Population												
Total retail pharmacies[2]	484	448	327	318	1,907	1,152	106	188	25	65	2		5,022
Estimate[3] additional pharmacists required by all retail pharmacists	111	98	57	80	694	810	66	89	13	38			(1,885) 2,056

[1] From Individual Pharmacist Survey conducted as part of this study, 1962.

[2] From files of Provincial Licensing Bodies in Pharmacy, 1962.

[3] Based on proportion indicated in sample.

C. HOSPITAL PHARMACY

The Canadian Society of Hospital Pharmacists, in its brief to the Royal Commission on Health Services, stated that at June 30th of 1961 there were 392 licensed hospital pharmacists in Canada.[1] The Hospital Survey for the Identification of Employed Pharmacists, undertaken as part of this study, indicated the existence of a minimum of 595 pharmacists working in hospitals in 1962.[2] While the former figure refers to those hospital pharmacists who possessed professional licenses, the latter enumerated hospital pharmacists without relationship to professional license. With the exception of the provinces of Saskatchewan and British Columbia, hospital pharmacists are not required, by law, to maintain a professional license.

Table 63 shows the relative importance of the tasks regularly performed by hospital pharmacists in terms of time spent in their pursuit. It is clear that the dispensing of prescriptions in hospital pharmacies is the function which places the greatest demands upon the pharmacists' time, with almost 50 per cent of hospital pharmacists devoting over 50 per cent of their total working time to this function.

[1] Brief of the Canadian Society of Hospital Pharmacists to the Royal Commission on Health Services, p. 2.

[2] See Appendix A of this study.

From *Table 64* we see that the average hospital pharmacy employs 2.2 pharmacists and that the average hospital pharmacist works 39.1 hours a week. The average hospital pharmacy dispenses 57,600 prescriptions a year, and the average hospital pharmacist 26,200 a year, or 504 a week. Therefore, in the average working week of 39.1 hours, a hospital pharmacist dispenses over 12 prescriptions an hour.

In response to the Pharmacist Survey, the chief pharmacists of those hospitals having a pharmacy currently under the direction of a pharmacist indicated a desire for 146 additional pharmacists to add to their staffs *(Table 66)*. This figure would add 0.6 pharmacists to each replying hospital pharmacy and, if the demand were met, would raise the average number of pharmacists per hospital pharmacy to 2.8 for this country.

However, these figures represent the current demand for pharmacists by the 233 reporting hospitals, all of which currently employ at least one pharmacist.

But, according to the Canadian Society of Hospital Pharmacists, Canada contains some 1,332 hospitals, only 294 of which employ at least one pharmacist.[1] This Society estimated optimum present manpower requirements in the area of Canadian hospital pharmacy on the following basis:

1. Each hospital of 75 beds requires the full-time services of one pharmacist.
2. Hospitals of over 75 beds require the services of one full-time pharmacist plus the full-time services of one additional pharmacist for each 100 additional hospital beds or major portion thereof.
3. Hospitals of 74 beds or under require the part-time services of one pharmacist.

Calculations based on the above led the Society to state that a work force of 2,480 hospital pharmacists would be optimum for Canada at the present time.[2] The Society went on to predict that this figure would increase to at least 2,600 by 1980, based on a Canadian population at that time of 23.2 million.[3]

The Society's views are well supported with argument and logic and it is not the intention of this study to refute them. Hospitals should provide their patients with a degree of protection in the dispensation of drugs at least as great as that offered when the patient receives his medication outside of hospital. No other person or group is as well trained in the role of the pharmacist than is the pharmacist himself. Because of federal regulations over the control of drugs, and because of the budgetary importance of relatively costly items of this nature, those hospitals not employing a pharmacist often have the dispensary under the control of the medical director or another responsible member of the medical staff. This tactic, besides imposing a job on a medical practitioner for which he is not specifically trained, restricts the use of this individual in the area of his own special and unique skills.

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[1] Brief of the Canadian Society of Hospital Pharmacists to the Royal Commission on Health Services, p. 28.

[2] Ibid., p. 30, 31.

[3] Ibid., p. 33.

The employment of a pharmacist by a hospital could, thus, prove to be both a financial and technical advantage.

It must be pointed out, however, that all hospital administrators do not agree with the logic of the hospital pharmacists. The position of a hospital administrator is often one of tightrope budgeting, with any additional staff positions necessitating at least immediate added cost being resisted as long as possible. Even if the administrator recognizes the need for a pharmacist, it may not be simple for him to convince the directors of the hospital of this need.

For this reason, we must assume that if the number of pharmacists cited in the hospital pharmacists' brief, 2,480, were immediately available for positions in hospitals a substantial portion of them would be unable to find employment in this field. The number of positions outlined, although they perhaps exist in theory, simply do not exist in fact.

What, then, is the actual current demand for hospital pharmacists? We have seen that 233 hospitals currently employing at least one pharmacist each would immediately absorb 146 more practitioners. We know, also, that some hospitals that do not enjoy the services of a pharmacist, at present, would hire if one was available. The only method of producing an accurate estimate of present demand would be to ask all the administrators or chief officers of the 1,332 hospitals in this country and, unfortunately, such an undertaking was beyond the financial capabilities of this study.

On the premise that hospitals presently not employing a pharmacist would absorb at least as many new pharmacists, were they available, as those hospitals that presently employ pharmacists are prepared to do, we would estimate that from 300 to 400 additional hospital pharmacists would find employment in that field in Canada at the present time. When added to the approximately 600 pharmacists now employed in the field (although not all professionally licensed) this would give a current total number of from 900 to 1,000 positions in hospital pharmacy.

It could be expected that this demand for from 300 to 400 additional hospital pharmacists would increase fairly rapidly as more and more hospitals become convinced of the value of these individuals, and as existing hospitals which employ pharmacists expend their facilities to the point that additional personnel is required in the hospital pharmacy.

We would, therefore, guess (and nothing more than a guess is possible from existing data) that this demand for new hospital pharmacist personnel, exclusive of replacement for those retiring or leaving this branch of the profession, would become 400 to 500 by 1965, and 600 to 800 by 1970.

If hospitals are ever to attract the number of pharmacists that they desire, they must realize that they must compete with other areas of the profession for the employment of these persons. Hospital pharmacists, in comparison to those in other pursuits within the profession, are grossly underpaid. As *Table 54* indicates, 57 per cent of hospital pharmacists receive salaries of less than $6,000 a year, while only 26 per cent of those in retail pharmacy, 31 per cent of those in university work,

13 per cent of those in the civil service, 11 per cent of those working for manufacturers, and 7 per cent in organizational work are paid so little. It is inevitable that some pharmacists who would prefer employment in hospital pharmacy are discouraged by the amount of remuneration offered and seek work in another branch of the profession.

TABLE 63

HOSPITAL PHARMACISTS – PER CENT OF THE TIME SPENT IN THE PERFORMANCE OF VARIOUS TASKS, 1962

Hospital Pharmacists' Tasks	Percentage of Time Spent on Various Tasks					
	0 Per Cent and Not Stated	Less Than 25 Per Cent	26 – 50 Per Cent	51 – 75 Per Cent	76 – 100 Per Cent	Total
	Per Cent					
Filling Prescriptions	8.8	15.3	26.7	30.3	18.9	100.0
Management of Personnel	39.6	58.5	1.6	0.3		100.0
Management of Dispensary Stock	23.8	67.9	7.8		0.5	100.0
Keeping Informed on New Drug Developments	19.7	80.0	0.3			100.0
Providing Professional Information and Advice	18.9	80.1	1.0			100.0
Research, Product Development and Manufacturing	43.8	54.4	1.5	0.3		100.0
Number Respondents = 386						

Source: Individual Pharmacist Survey, conducted as part of this study, 1962.

TABLE 64

HOSPITAL PHARMACY – AVERAGE ANNUAL NUMBER OF PRESCRIPTIONS AND WEEKLY PHARMACIST HOURS PER PHARMACY AND PHARMACIST, 1962

Hospital Pharmacy	Province of Present Practice												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Averages												
Total Weekly Pharmacist Hrs. Per Hospital Pharmacy	65	70	96	73	79	131	68	85	66	142	39	61	86
Number Pharmacists Per Hospital Pharmacy	1.8	1.9	2.4	1.8	2.1	3.2	1.7	2.3	1.5	4.0	1.0	7.0	2.2
Weekly Hours Per Pharmacist	36.1	36.8	40.0	40.6	37.6	40.9	40.0	37.0	44.0	35.5	39.0	8.7	39.1
Annual Number Of Prescriptions Per Hospital Pharmacy (thousands)	31.8	36.8	32.2	45.1	45.6	144.4	29.0	26.7	12.0	50.0	2.8	36.8	57.6
Annual Number of Prescriptions Per Pharmacist (thousands)	17.7	19.4	13.4	25.1	21.7	45.1	17.1	11.6	8.0	12.5	2.8	12.4	26.2
Total Hospital Pharmacies Reporting	26	17	19	15	92	37	6	15	2	1	2	1	233
Total Hospital Pharmacies Operating Under Direction of a Pharmacist[1]	26	21	20	15	99	102	10	16	2	3	2		316
Sample as Per Cent of Total Population	100.0	81.0	95.0	100.0	92.9	36.3	60.0	93.8	100.0	33.3	100.0		73.7

[1] As identified from the Canadian Hospital Directory, 1962.

Source: Individual Pharmacist Survey conducted as part of this study, 1962.

TABLE 65

HOSPITAL PHARMACY – CURRENT DEMAND FOR HOSPITAL PHARMACISTS, BY HOSPITALS ALREADY EMPLOYING PHARMACISTS, 1962

Hospital Pharmacy	Province of Current Practice												
	B.C.	Alta.	Sask.	Man.	Ont.	P.Q.	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada
	Numerical Distribution - Sample[1]												
Total Hospital Pharmacies Reporting	26	17	19	15	92	37	6	15	2	1	2	1	233
Additional Pharmacists Required by Reporting Hospital Pharmacies	13	5	9	4	57	36	4	10	1			7	146
	Total Hospital Pharmacy Population[2]												
Total Hospital Pharmacies[3]	26	21	20	15	99	102	10	16	2	3	2		316
Estimate[4] Additional Pharmacists Required by All Hospital Pharmacies Currently Under Direction of a Pharmacist	13	6	9	4	61	99	7	11	1				(198) 211

[1]From Individual Pharmacist Survey, conducted as part of this study, 1962.

[2]All Hospital Pharmacies currently under the direction of a Pharmacist.

[3]As identified from the Canadian Hospital Directory, 1962.

[4]Based on proportions indicated in sample.

D. UNIVERSITY FACULTIES OR SCHOOLS OF PHARMACY

The demand for pharmacists by university faculties or schools of pharmacy is, generally, for individuals with advanced degrees and highly developed skills.

Table 66 shows the numbers of pharmacists employed on the staffs of these institutions during 1962. As noted in the table, these figures do not include graduate students or any staff members who do not have a basic education in pharmacy. The total of 78 pharmacists so employed provides an adequate level for this branch of the profession under prevailing circumstances and faculty budgets.

Of the future, the brief of the Canadian Conference of Pharmaceutical Faculties to the Royal Commission on Health Services states: "In the future with the increased university enrollments, the greater number of students electing to undertake graduate studies and the increased competition for good men in universities

and industry, there will develop in pharmacy as in other disciplines a shortage of suitable professors".[1]

It is difficult to assess the number of additional pharmacists, at advanced degree level, that will be needed to satisfy the future needs of this area of practice. Since our demand figures exclude the numbers needed for normal replacement through retirement, we would anticipate that the number will be relatively insignificant when related to total demand and would amount to no more than an average of three to four per year for all of Canada.

TABLE 66

NUMBERS OF PHARMACISTS EMPLOYED WITHIN A FACULTY OR SCHOOL OF PHARMACY, 1962

Faculty of Pharmacy	Number of Employed Pharmacists[1]
British Columbia	12
Alberta	6
Saskatchewan	15[2]
Manitoba	6
Toronto	9
Montreal	16
Laval	10
Dalhousie	4
Total	78

[1] Figures do not include graduate students or staff members who do not hold a basic degree in pharmacy.

[2] Includes the staff of the University Hospital, Saskatoon.

Source: As quoted by Deans or Directors of separate Schools of Pharmacy, 1962.

E. GOVERNMENT SERVICE

This section is devoted to the consideration of pharmacist employees of the ten Provincial Governments and the Federal Government of Canada. In the case of either of these levels of government, pharmacists employed in government hospitals have been eliminated to prevent overlap with the section devoted to hospital pharmacy. Also, in the case of the Federal Government, pharmacists in the Armed Forces have been eliminated and will be dealt with separately in this chapter.

Table 67 indicates the numbers of pharmacists employed outside of hospitals by the provincial governments. It is, perhaps, surprising that the services of only fourteen pharmacists are utilized in non-hospital capacity by this level of government.

In *Table 68* the number of pharmacists employed in a non-hospital capacity by the Federal Government is shown to total 37. The pharmacist staff of the Department

[1] Brief of the Canadian Conference of Pharmaceutical Faculties to the Royal Commission on Health Services, p. 28.

of National Health and Welfare includes sixteen inspectors for the Food and Drug Directorate and the Division of Narcotic Control.

Provincial Health Ministers, in providing information on present pharmacist employees, were asked also to indicate the number of additional pharmacists that could be immediately utilized by their governments if they were available. Seven of the Ministers replied to this question and indicated desire for a total of nine additional pharmacists in non-hospital capacities. Assuming that those Ministers who did not reply to the question would utilize additional personnel in the same ratio as those that did, it is possible to state that there is a current demand for this type of personnel in the provincial level of government of 13 pharmacists.

The Federal Government has a backlog of unfilled positions open to pharmacists in both the inspection and scientific services branches of the Food and Drug Directorate of the Department of National Health and Welfare. The Special Committee on New Drugs appointed by the Royal College of Physicians and Surgeons at the request of the Minister of Health and Welfare of the Federal Government in 1962, in their Report tabled in December of that year, agreed with the staffing requirements as outlined to them by the Director of the Food and Drug Directorate. These requirements stated the need for nine additional persons in the Laboratory Division of the Directorate, who were pharmacists.[1] Pharmacists are also in perpetual demand by the Inspection Services of the Directorate and Division of Narcotic Control and it can be assumed that at least ten additional pharmacists would find positions in this area were the necessary pharmacists available. The current positions held by pharmacists in the Department of Veterans Affairs are largely administrative and in all probability there is no current need for additional non-hospital pharmacist personnel.

In total, it is therefore assumed that an additional 32 pharmacists would immediately find employment with either a provincial or the Federal Government in a non-hospital capacity, were pharmacists available for these positions.

With normal growth in government departments and agencies, we would assume that this figure, exclusive of normal replacements, would become 38 by 1965 and 45 by 1970.

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[1] Report of the Special Committee on New Drugs appointed by the Royal College of Physicians and Surgeons of Canada on the request of the Minister of National Health and Welfare, 1962, p. 32.

TABLE 67

NUMBERS OF PHARMACISTS EMPLOYED OUTSIDE OF HOSPITALS, BY PROVINCIAL GOVERNMENTS, 1962

Provincial Government	Number of Employed Pharmacists[1]
British Columbia	4
Alberta	0
Saskatchewan	3
Manitoba	2
Ontario	0
Quebec	1
New Brunswick	0
Nova Scotia	1
Prince Edward Island	0
Newfoundland	3
Canada	14

[1] Numbers do not include those employed in provincial hospitals.

Source: Figures quoted by Ministers of Health of each province, 1962.

TABLE 68

NUMBERS OF PHARMACISTS EMPLOYED OUTSIDE OF HOSPITALS, BY THE GOVERNMENT OF CANADA, 1962

Department	Number of Employed Pharmacists[1]
National Health and Welfare	31
Veterans Affairs	6
Total	37

[1] Numbers do not include those employed in government hospitals.

Source: Quoted by departments at request of the Research Division, Royal Commission on Health Services, 1962.

F. ARMED SERVICES OF CANADA

The numbers of pharmacists employed in the Armed Services of Canada during 1962 are set out in *Table 69*. It will be noted that 77 pharmacists are so employed.

In a communication from the Surgeon General's department of the Department of National Defence in February of 1962, it was indicated that the number of established positions for pharmacists in the Armed Forces at that time were 90, being divided between the Army 47, Navy 7 and Air Force 36. From this it will be noted that the Armed Forces currently have 13 unfilled positions for pharmacists.

Future demand, exclusive of normal replacement, is too dependent upon Canadian defence policy and consequent strength of the services to predict with any

degree of accuracy. Future demand has, therefore, been assumed as almost static with demand, exclusive of normal replacement, growing from the present 13 to 15 in 1965 and 20 in 1970.

The state of mobilization of this country would greatly affect these estimates which are based on approximately the same degree of mobilization as that in effect in 1962.

TABLE 69

NUMBERS OF PHARMACISTS PRESENTLY EMPLOYED IN THE ARMED FORCES OF CANADA, 1962

Branch of Armed Forces	Number of Pharmacists Employed
Royal Canadian Navy	7
Canadian Army	36
Royal Canadian Air Force	34
Total	77

Source: Numbers quoted by the Department of National Defence at the request of the Research Division of the Royal Commission on Health Services, 1962.

G. PHARMACEUTICAL MANUFACTURING

There is a well-defined and substantial desire for trained pharmacists, in varying capacities, within the pharmaceutical industry. It is difficult, however, to quantitatively measure this demand.

Table 70 contains the results of a questionnaire which was circulated to manufacturers by the Canadian Pharmaceutical Manufacturers Association at the request of the Royal Commission on Health Services. In all, 48 firms answered the questionnaire. Among these 48 firms were all of the larger firms which make considerable use of pharmacists, as well as many smaller concerns which do not. The 48 replying firms presently employ 612 pharmacists. Three of these firms did not state present requirements for pharmacists, but the 45 that did indicated that, were pharmacists freely available, they would hire 456 more. This compares to a present complement of pharmaceutical manpower, in the firms answering this question, of 542. Thus, in these 45 firms, there is a current desire for 84 per cent more pharmacists than they are currently able to obtain.

Forty-three firms, which currently employ 532 pharmacists, predicted that by 1965, current demand will have increased to 761 new pharmacist-employees to fill positions that they feel will be available. Forty of these firms, currently employing 521 pharmacists, expect to require 1,135 more by 1970.

The vast majority of these people, both currently employed and those projected as present and future requirements, are either employed in, or required for, positions as medical representatives. In this regard, the complex nature of modern

medicinals and the importance of possible toxicity and side reactions makes it highly desirable that those that engage in their promotion to the medical profession be knowledgeable in chemistry and pharmacology. These qualities make pharmacists prime candidates for such positions.

There will also be a progressive need for pharmacists within the research, production, quality control and product development departments of the pharmaceutical industry, as it grows in size and competence. Largely, these pharmacists will be required to possess graduate degrees and a high degree of technical skill.

Although our basis of demand estimates is the predicted requirements of 40 to 48 firms, as previously stated, these firms represent the great bulk of that portion of the industry that makes extensive use of pharmacist manpower. It is, therefore, quite probable that 500 pharmacists could immediately find positions in the industry. Exclusive of normal replacements, these requirements might be expected to be 800 by 1965 and 1,300 by 1970.

This demand, unlike that in other areas of the profession, is not restricted to pharmacists. Although desiring pharmacists for the great majority of these positions, pharmaceutical manufacturers, if unable to obtain them, seek science graduates in other fields as medical service representatives, and advanced degree people who do not have a basic education in pharmacy for technical positions in research, quality control, production and product development.

TABLE 70

NUMBERS OF PHARMACISTS PRESENTLY EMPLOYED BY PORTIONS OF THE PHARMACEUTICAL INDUSTRY, AND PROJECTED REQUIREMENTS TO 1970 FOR ADDITIONAL PHARMACIST PERSONNEL, 1962

Question	Number of Firms Answering Each Question	Number of Pharmacists Presently Employed by Answering Firms	Requirements for Additional Pharmacist Personnel by those Firms Estimating
How many pharmacists are presently in the employ of your firm?	48	612	
If pharmacists were available, how many more would your firm hire at this time?	45	542	456
Assuming unlimited availability, how many more pharmacists would you expect to have in 1965 than you now employ?	40	521	1,135

Source: Questionnaire circulated at the request of the Royal Commission on Health Services by the Canadian Pharmaceutical Manufacturers Association, 1962

H. PHARMACY ORGANIZATIONS

Pharmacy organizations, such as the provincial licensing bodies, provincial commercial organizations of retail pharmacists and national organizations, are not important employers of full-time pharmacist personnel. As indicated in *Table 71*, only 16 pharmacists devoted themselves to this employment within the profession in 1962.

During 1962, the services of two additional pharmacists were being sought for employment in this field in a capacity other than replacement of retiring personnel.

As these organizations extend their interests and as more inspection personnel becomes necessary for the adequate enforcement of provincial pharmacy acts, it is possible that demand for new personnel will grow to about four by 1965 and eight to ten by 1970.

TABLE 71

NUMBERS OF PHARMACISTS PRESENTLY EMPLOYED BY PHARMACY ORGANIZATIONS, 1962

Province of Location of Pharmacy Organization	Number of Pharmacists Employed
British Columbia	2
Alberta	1
Saskatchewan	1
Manitoba	1
Ontario	10
Quebec	1
Total	16

I. CONCLUDING OBSERVATIONS

While the shift to the preparation of medicinals within the closely controlled and technologically advanced pharmaceutical manufacturing establishment from the retail or hospital dispensary has tended to partially relieve the burden of work of pharmacists practising in these outlets, all other factors bearing on demand have combined to add to the workload assumed by these persons and to dictate that they be much better trained than would have been necessary a decade or two ago. The modern pharmacist is being utilized, to a greater degree, for his professional knowledge rather than for his manual skills. As the type of services he performs are changing, so are the number of these services. He is required to provide, generally, more services of a much more complex nature than those required years ago.

The pharmacist with advanced academic training is finding himself in an area of greatly increased demand for his services by universities and manufacturing facilities as the growing complexity of drug manufacture and the increased familiarity with drug action has stimulated a higher degree of research, and has necessitated a more comprehensive academic curriculum within our universities and their pharmacy schools.

There is every indication that these trends will continue and that the pharmacists of the future will be progressively better trained and more in demand.

Our estimations of currently unfilled demand for the services of pharmacists and predictions of the magnitude of this demand in the future are based on free availability of supply of pharmacists. In other words, if pharmacists were freely available, our figures indicate how many of them would find employment at the times cited. These figures are also exclusive of the demand that will arise out of normal replacement of retiring personnel. In this study we have chosen to consider replacement as a negative factor in supply rather than a positive factor in demand.

Table 72 summarizes current and projected demand for the service of pharmacists in 1962, and cumulative demand in 1965 and 1970 exclusive of normal replacements.

This rate of demand is predicated on the numbers of pharmacists that would be hired by employers of pharmacists in these years, and also on a rate of net new retail pharmacy formation to 1970 which would equal that of the last eight years. There is some evidence to suggest that even though net new retail pharmacy formation has not kept pace with population increases over the last eight years, it is slowing down. In such an event, our demand figures for retail pharmacy might be slightly overstated.

No attempt has been made in this section to assess the level of pharmacist manpower that would prove sufficient in the adequate provision of pharmaceutical services to the expanding population of this country. This subject will receive discussion in Chapter 5.

TABLE 72

CURRENT AND PROJECTED CUMULATIVE DEMAND FOR PHARMACISTS EXCLUSIVE OF REPLACEMENTS, 1962, 1965 AND 1970

Area of Pharmacy Practice	Demand for Pharmacists Exclusive of Replacements		
	Current (1962)	1965	1970
	Numbers - Cumulative to Years		
Retail Pharmacy	2,056	2,436	2,958
Hospital Pharmacy	300 to 400	400 to 500	600 to 800
University Schools of Pharmacy	—	12	32
Government Service	32	38	45
Armed Services	13	15	20
Pharmaceutical Manufacturing	500	800	1,300
Pharmacy Organizations	2	4	8-10
Totals	2,903 to 3,003	3,705 to 3,805	4,963 to 5,165

CHAPTER 5

EVALUATION OF SUPPLY OF PHARMACISTS IN RELATION TO DEMAND FOR THEIR SERVICES

A. SUPPLY AND DEMAND FOR PHARMACISTS

Even the most casual inspection of predicted demand and supply of pharmacists yields the realization that, although normal replacement needs will be met, the current and forecast extra demand for pharmacists will never be completely satisfied at the predicted rate of supply. Indeed, even the anticipated growth in demand between 1962 and 1970 would not be satisfied with the numbers of new entrants to the profession that will be available by that time after replacement demand has been satisfied. From a current number of unfilled positions in the profession numbering in the neighbourhood of 3,000, and assuming even that these positions were filled, an additional 2,000 pharmacists would still be required by the year 1970 to fill positions in an expanding field of endeavour. However, total graduates available to fill these positions, it is expected, will number less than 1,500 before that date. This figure represents new entrants to the profession by 1970, after just under 2,000 have been deducted as necessary for normal replacement in the intervening years.

Recognizing the restrictive influence of supply, and the consequent "sellers' market" in pharmacy manpower, attention must be directed toward the development of a concept of adequate level of pharmacy manpower, both now and in the future, in order to judge the appropriateness of supply levels. It must be recognized that there will not be enough pharmacists in the foreseeable future to completely satisfy the demand of employers.

From *Table 72* it is apparent that the professional areas of pharmacy practice that will continue to be deficient in pharmacists are those that are considerably deficient at the present time in this respect. These areas are retail, hospital and manufacturing pharmacy. Other areas of the profession appear likely to get close to the number of pharmacists that they will require by 1970.

But if the areas of retail, hospital and manufacturing pharmacy are deficient in pharmacists from a demand point of view, are they also deficient from the point of view of adequacy?

B. ADEQUACY OF PHARMACY MANPOWER AND REQUIREMENTS[1]

1. Retail Pharmacists

Table 59 shows that there were 7,972 retail pharmacists in Canada in 1962. Based on a population that year of 18,570,000, this represented a population per retail pharmacist ratio of 2,329. The number of retail pharmacists is likely to increase by 175 in 1965 to 8,149, and by 955 by 1970 to 8,927. The Report of the Royal Commission on Canada's Economic Prospects predicted a maximum Canadian population in 1965 of 19,820,000, and in 1970 of 21,130,000.[2] The maximum population estimate set out in this Report for 1960 proved to be somewhat understated, so their figures for 1965 and 1970 can be considered minimum. On the basis of these estimates and our own for predicted numbers of retail pharmacists in these years, the population per retail pharmacist ratio will become 2,432 in 1965 and 2,367 in 1970. It is, therefore, likely that the number of retail pharmacists will not increase proportionately to population to 1965, but will exceed proportionately population increase between 1965 and 1970 as the augmented university enrolments expected begin to have their effect.

It is apparent, however, that if our predictions prove correct, there will be very little change in the relationship between retail pharmacists and population in the next eight years. Indeed, it would be expected that if our estimates had been projected further, an increasing supply of pharmacists would cause the numbers of population per retail pharmacist to decline following 1970.

The level of retail pharmacists predicted for 1965 and 1970 is certainly adequate to meet the needs of the Canadian public. No evidence could be obtained that the current number of pharmacists in this field in any way restricted the availability of pharmaceutical services, through retail, to the Canadian populace. The fact that our predictions envisage very little increase in the numbers of persons per retail pharmacist in these future years would suggest that retail pharmacist manpower will be adequate then, also.But, in view of the relative scarcity of pharmacy practitioners in other branches of the profession, we must consider whether retail pharmacists are, and will be, in fact, adequate in relation to the needs of Canadians for their services.

We have seen, in Chapter 4, that a considerable proportion of the retail pharmacist's time is spent in commercial pursuits, or at least in activities unrelated to his professional sphere of activity. We have noted, also, that current trends in drug proliferation, control and utilization have tended to make greater professional demands upon his time. However, on balance, it must be conceded that the average retail pharmacist is capable of performing more professional services than he is, at present, required to accomplish.

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[1] The data in this chapter on numbers of pharmacists in the fields mentioned were derived from various sources as noted in Chapter I. In that chapter a total of 5,672 replies were received from 11,000 pharmacists surveyed. These survey data were not used in the estimates of the present numbers of pharmacists used in this and the previous chapters.

[2] Final Report of the Royal Commission on Canada's Economic Prospects, 1957, p. 107.

It is true that any increase in the professional utilization of the retail pharmacist's time will be at the expense of the proportion of time spent in commercial pursuits. This study does not deplore the existence of commercialism within retail pharmacy, nor does it find the two incompatible. As pointed out previously, the commercial aspect of retail pharmacy has allowed the development of pharmacy services in communities of Canada that could not have afforded them otherwise. However, it is entirely likely that more efficient use of non-professional personnel in the commercial area of retail pharmacy would free valuable pharmacist hours for devotion to the professional side of this enterprise. This, perhaps, is the key to better utilization of professional time in this area of practice.

While it is difficult to predict, from available data, the number of retail pharmacists that would be required to adequately meet the needs of the Canadian people, if no pharmacists other than those required for normal replacements entered retail practice before 1970, on the basis of the population estimates used previously, a retail pharmacist population of 7,972 in 1965 would produce a population per retail pharmacist ratio of 2,486, and in 1970 this figure would become 2,650. In our opinion, this could in no way be considered inadequate from the point of view of service to the public. Canada could, thus, maintain a retail pharmacist population until 1970, at least, which is equal to that at the present time, without lessened availability of professional service.

A constant population of retail pharmacists would not, of course, allow an appreciable increase in the number of pharmacies over this period. However, it would not prevent an enterprising pharmacist from establishing a pharmacy where a need for one exists, for, as some would open, others would close. It is generally conceded that urban areas, and particularly the larger of these, are inhabited by too many pharmacies. In a condition of restricted supply of pharmacists, it is likely that it would be some of these that would close.

Although in theory it is quite simple to say that when the need for the limited supply of pharmacists is demonstrated in other areas of practice, that supply of pharmacists to retail pharmacy should be discouraged, it is quite another matter, in a free enterprise economy, to outline how this could be accomplished. This will receive discussion in a later portion of this chapter.

In summary, the current population of retail pharmacists, although far from the number that could find employment in this branch of the profession, would be adequate to fill the needs of the population at least until 1970. A limitation on the future supply of pharmacists to this area of the profession would simply mean that a greater proportion of the retail pharmacist's time would be devoted to the professional side of his practice. It is also possible that such restriction of supply would encorage the more logical location of pharmacies and that each would be more successful, at least from the standpoint of prescription volume.

Before leaving this consideration of retail pharmacy, it should be pointed out that the emergence of a widely accepted plan of prepayment or insurance for prescription services, whether administered by a government or private insuring agency, would drastically affect the utilization of the retail pharmacist's time. The increased

drug utilization that would result, along with a possible increase in the keeping of records, would either limit, or entirely eliminate the ability of the retail pharmacist to increase the number of people for whom he provides his professional services.

2. Hospital Pharmacists

In direct contrast to the relationship in retail pharmacy which shows demand for employment of pharmacists excessive to that which could be considered adequate in order to provide and maintain essential services for the people of Canada, it could well be that the demand for pharmacists to serve in hospitals is considerably below what would be considered adequate. For, while we have predicted that 600 to 800 hospital pharmacists, exclusive of those required for normal replacement, could find positions in this branch of the profession by 1970, the Canadian Society of Hospital Pharmacists provides convincing argument in their brief to the Royal Commission on Health Services that an adequate level of pharmacist employment in hospitals in Canada would require that 1,885 additional hospital pharmacists be employed immediately by Canadian hospitals.[1]

It has been shown, in Chapter 4, that there is a much higher utilization of the professional time of a pharmacist in hospital than is the case of pharmacists employed in retail pharmacy.[2] In fact, the time of the hospital pharmacist is, generally speaking, completely utilized in professional functions. Probably a greater utilization of non-professional personnel, under the direction of a pharmacist, or other methods of promoting efficiency within the pharmacy of a hospital, would allow the pharmacist more time to devote to purely professional functions. However, hospital pharmacies are generally quite efficiently run at the present. They have had to be in consideration of the shortage of professional personnel in this area of pharmacy. Any possible increase in efficiency, then, would likely affect the professional output of the hospital pharmacist only to a minor degree.

It is quite apparent that adequate levels of pharmacist manpower will not be achieved in hospital pharmacy in the foreseeable future. This situation is likely to exist because of restriction in both supply of and demand for pharmacists in hospitals.

It has been shown that, regardless of demand or adequacy, the growth in the hospital pharmacist workforce will only be about 34 by 1965 and 185 by 1970. These figures fall far short of the predicted demand for hospital pharmacists' services which is expected to be 400 to 500 by 1965 and 600 to 800 by 1970.[3]

In relation to the needs of the populace, every effort should be made that will increase the numbers of pharmacists available to this area of practice. Even though demand falls short of adequacy, it is still sufficiently larger than probable supply

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[1] Brief of the Canadian Society of Hospital Pharmacists to the Royal Commission on Health Services, 1962, pages 28 to 31.

[2] See pp. 91-96.

[3] See Table 72.

that measures to fulfil demand will bring the hospital pharmacist workforce closer to what may be considered an adequate level.

3. Pharmacists Employed in the Pharmaceutical Industry

Pharmacists required for employment within the pharmaceutical manufacturing industry are largely of two types, technical or scientific staff, most of whom will be required to possess higher academic achievement than a basic degree in pharmacy, for use in research, product development, quality control and production facilities, and those that are desired for positions on the sales or medical detail staffs.

While the importance of the increasing need for scientific personnel by industry (and by faculties and government as well) should not be underestimated, it is clear that an overwhelming proportion of the demand for pharmacists in industry is for utilization as medical detail personnel.

There are presently about 700 pharmacists employed in some aspect of pharmaceutical manufacturing in Canada.[1] This figure is based on the fact that 48 firms replying to a questionnaire on employed pharmacists, in which were contained the largest firms utilizing pharmacists, currently employ the services of 612 pharmacists.

We have estimated that the current unfilled demand for pharmacists within the industry is approximately 500, with this demand, exclusive of normal replacements, increasing to 800 in 1965 and 1,300 in 1970.[2] It is obvious that this demand will not be met as it is probable that only 27 additional pharmacists by 1965 and 145 by 1970 will be added to the present numbers in this type of employment.

The possibility exists that pharmaceutical manufacturers could increase the efficiency of the pharmacists in their employ by one means or another. Some physicians express an unwillingness to receive product information in this manner and perhaps they should be left to acquire this information in some other way. Pharmacist detail men are often required to engage in promotional activity in regard to older and relatively well-known products about which there is really little that the physician does not already know. This type of product reminder could possibly be accomplished in other ways such as through advertisements in medical journals and direct mail. The pharmacist detail man is often required to sell special offers of non-prescription items to the retail pharmacist. Perhaps the sales organizations of drug wholesalers could be utilized in this regard.

4. Pharmacists Employed in Other Areas of the Profession

All other areas of pharmacy practice may be considered together in that adequacy and demand may be equated. It can be considered, for example, that the demand for pharmacists in government service, the armed forces and university facilities will be no larger than the number considered adequate in these cases.

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[1] Table 70.
[2] Table 72.

The figures presented in Table 72 (current and cumulative future demand estimates by area of practice) show that university faculties will probably gain the number of pharmacists that they require by 1970. Even the armed services, deficient in numbers of pharmacists for years, will likely acquire the numbers that they will require by 1970. Government service, although predicted supply shows they will gain only half of those that they need, have use for such a few pharmacists in comparison to total supply, it is possible that vigorous recruitment effort will see that these demands are met.

C. EFFICIENT ALLOCATION OF PHARMACIST MANPOWER

We have seen that demand for the services of pharmacists will not be satisfied at predicted rates of enrolments and graduations from pharmacy colleges and that other factors bearing on supply of pharmacists are likely to have a negligible effect. This, then, suggests two alternative courses of action, or perhaps a combination of both.

The first alternative is to increase the supply of new pharmacists to the point where demand will more nearly be satisfied at some point in the future. This would involve active recruitment of qualified students and its success would be limited by the number of such students who chose pharmacy as a career. As well, unless the proportion of pharmacists who enter retail pharmacy were decreased, increased enrolments would produce more pharmacists for retail than for all other areas of the profession combined, a place where augmented supply of pharmacists is likely needed least when we consider the maintenance of essential services for the people of Canada. As a result, retail pharmacy would become so competitive that each retail pharmacist would spend a very small proportion of his time in professional pursuits.

The second alternative, which is, indeed, suggested by the first, is to influence more new entrants to the profession into following a career in pharmacy in an area where they are needed most. In a condition of limited supply, pharmacy in Canada is faced with a problem of efficient allocation of relatively scarce new resources between alternative types of practice. It has been pointed out earlier in this chapter that, although in relation to demand, all areas of pharmacy are deficient in manpower, in relation to manpower levels that could be considered adequate for the maintenance of essential services in this country, retail pharmacy attracts a disproportionate number of practitioners, while hospital pharmacy and the practice of pharmacy in the pharmaceutical industry are not able to obtain a pharmacist workforce which is sufficient. It is clear that since the restrictive supply of manpower is likely to continue, efficient allocation of these scarce resources would involve the direction of new entrants to the profession toward practice in hospitals and industry in greater numbers.

But how is this to be done? Encouragement can be given to those who prefer to practise in the areas of need. Hospital pharmacists' salaries should be increased. This would increase the numbers of pharmacists who enter this field since, as discussed in Chapter 3, it is apparent that some pharmacists who would prefer hospital practice do not follow this career because the remuneration is much lower

than that available in other areas of the profession. Scholarships, which are deficient in pharmacy anyway, could be offered to those who would follow a career in hospital pharmacy. Pharmaceutical manufacturers, instead of competing for personnel following graduation, could institute an assistance programme whereby pharmacy students who would follow a career in the industry could be financially aided through their undergraduate years.

Possibly the best solution to filling the demand, or at least providing pharmacists in adequate numbers, would be an approach which is a combination of the two cited. Vigorous recruitment programmes should be instituted by the profession, and those pharmacy educational facilities without capacity beyond present enrolments should be enlarged if student demand can be generated. At the same time, all possible should be done to encourage students to practise in an area of the profession which demonstrates a real public need. Financial opportunities should be increased in deficient areas of the profession until they at least equal what is initially available in retail practice.

CHAPTER 6

CONCLUSIONS

1. Demand for the services of pharmacists currently far exceeds their supply in all areas of professional endeavour. It is likely that aggressive recruitment of pharmacists by branches of the profession other than retail, hospital and industrial pharmacy would correct the deficiency that currently exists by 1970. However, if government service is to be successful in obtaining those pharmacists either currently sought or needed in the future, it is imperative that the civil service recognize the desire of pharmacists for status and remuneration equal to that obtainable in other areas of practice. At predicted levels of pharmacy graduates, which is the only source of supply of pharmacists in Canada of any significance, and if these graduates distribute themselves between branches of the profession as anticipated, hospital and industrial pharmacy will become more markedly deficient in pharmacist manpower as the years pass while the ratio of retail pharmacists to population is likely to be on an uptrend again by 1970. However, demand for pharmacists in these three areas of employment would be far from satisfied.

2. Because the demand for pharmacists shows no indication of being satisfied in retail, hospital and industrial practice, these professional areas have been examined from the standpoint of adequate levels of pharmacist manpower to provide and maintain essential services for the people of Canada. On this basis, retail pharmacy contains an abundance of practitioners while hospital and industrial pharmacy are markedly deficient, and unless corrective measures are taken, both the abundance in retail and the deficiency in hospital and industrial pharmacy are likely to become more exaggerated by 1970.

3. Since supply is the limiting factor in pharmacist manpower, the problem of efficient allocation of relatively scarce manpower resources, between areas of professional practice, must increasingly become the concern of professional organizations in pharmacy and the schools of pharmacy in Canada. Fully 70 per cent of current undergraduates expect to practise in the retail branch of the profession following graduation, while only 13.5 per cent expect to enter hospital pharmacy and 10.6 per cent the pharmaceutical industry. These proportions must be influenced if the needs of the public are to be best served by new entrants to the profession. In attempts to influence the allocation of professional manpower, every effort should be made to direct a greater proportion

of new entrants to the profession toward practice in the hospital and industrial areas and to reduce the proportion which tends toward retail pharmacy where an already adequate level of manpower currently exists.

4. There is a definite need for accelerated recruitment of suitable candidates for the schools of pharmacy in Canada. Pharmacy enrolment, and as a consequence new graduates, is likely to increase at a rate which is considerably less than university enrolment generally. There are currently, or will shortly be, sufficient capacities within the physical facilities of most schools of pharmacy in Canada for a considerably increased enrolment of undergraduates. Where such does not exist, it is critical that capacity increases be initiated as soon as possible because of the time lapse between the planning of new or larger facilities and their ability to accept enrolments. Intensified recruitment effort will matter little if the schools are unable to accept the students in sufficient numbers. With the vastly increased enrolments predicted for universities generally, recruitment effort for pharmacy has every chance of producing marked success in increasing pharmacy enrolment in the next decade. While it is true that accelerated recruitment would make a larger number of graduates available to retail pharmacy, an area with current unfilled demand for pharmacists but which already employs an adequate number, it would also tend to reduce the real need in hospitals and manufacturing pharmacy. Accelerated recruitment combined with influences that would direct a greater proportion of the graduates so produced to practise in deficient areas of the profession would best serve both the profession itself and the people of Canada.

5. The number and proportion of women is increasing in pharmacy and, when compared generally with male practitioners, female pharmacists have a shorter professional life. As a result, retirement rates in pharmacy will increase as the proportion of women to total practitioners becomes greater. This could well offset, to a degree at least, the benefits to the profession and public of greater enrolments and larger numbers of graduates of the schools of pharmacy in Canada. In addition, because a much greater proportion of women choose to practise in hospitals than do men, it could critically increase the numbers of pharmacists needed in this already deficient area of practice.

6. Although the magnitude of the average scholarship received by pharmacy students compares generally with those received by students of other professions, the number of scholarships received by pharmacy students is considerably lower on this comparative basis. More scholarships should be provided for pharmacy students. This need is further underlined by the relative difficulty experienced by pharmacy students in financing their education, in that a larger proportion than in other professional courses find it necessary to engage in part-time work during the school year and a greater proportion of pharmacy students draw more heavily upon prior savings for this purpose. These facts are apparent even though the expenditures of pharmacy students in relation to living and social costs during the school year are considerably lower than those of students of other faculties. Perhaps in order to provide

further stimulus toward the practice of pharmacy in hospitals, additional scholarships in pharmacy should be provided for suitable candidates proceeding to this type of practice.

7. An aid to the efficient allocation of professional manpower resources would be the closer relationship between financial opportunities offered in the various branches of the profession. Second to humanitarian considerations, financial incentives play an important role in the choice of pharmacy as a profession. However, the opportunities for immediate financial reward and future financial advancement lead new entrants away from areas of practice that are deficient in manpower. This is especially noticeable in hospital pharmacy where the level of remuneration discourages some who would prefer employment in this area. It will prove difficult to convince suitable candidates to follow a career in hospital pharmacy unless the level of remuneration in this branch of the profession is substantially increased.

8. Pharmaceutical manufacturers should recognize the increasing importance of pharmacists in their detailing and technical staffs through a well-designed student aid programme for those promising candidates who evidence an interest in a career in the industry of pharmacy. It will not prove effective enough to compete with other areas of the profession for manpower following attainment of a pharmacy degree. The manufacturer, therefore, who recognizes the need for personnel of this type in the future and who undertakes to supply this need through, for example, the offering of interest free loans to students during their undergraduate careers which could be repaid following graduation and employment within the lending firm, would probably harvest pharmacist personnel in better numbers and better oriented toward a career in industry. It is recognized that many pharmaceutical manufacturers are currently considerable contributors towards the scholarships and financial aid offered to pharmacy students through the Canadian Foundation for the Advancement of Pharmacy. However, most manufacturers in this field could, in addition, offer the use of capital on a repayment basis to students who would work for them following graduation. This, of course, would necessitate the manufacturer recruiting personnel at an earlier stage of educational development than is currently the case. If such programmes were available, it would also facilitate the work of those involved in recruitment of suitable candidates for the schools of pharmacy. At present the student who experiences difficulty in financing his education is forced to supplement his income through part-time work in retail pharmacy and, perhaps naturally, follows a similar career following the receipt of his degree.

9. The last fifteen years have seen a great expansion in the length and comprehensiveness of the courses offered by Canadian schools of pharmacy. Many have increased from two years to four years in length with a corresponding increase in course content. University facilities and staffs provided for the education of pharmacists are larger and better. The total effect of these changes is that the pharmacy graduate of today is much better trained than were his predecessors in the profession. With the increasing complexity of

medicinal agents and with the increasing dependency on pharmacists as specialists in drugs by members of the public and other health professions, higher educational standards provide the public with needed increased competence in this field of endeavour. Unfortunately, the longer courses appear to have also had the effect of discouraging entrants to the profession. It is not possible to consider the pharmacist of today over-educated for the service that he provides. It has been noted that there seems to be a degree of under-utilization of the professional talents of those employed in retail pharmacy. However, such under-utilization refers to the amount of time spent in retail pharmacy in a professional capacity rather than a less than full utilization of education. Higher educational levels result in each service being more competently performed rather than increasing the numerical level of such services.

10. Graduate programmes, already increased profoundly in both number and quality, must continue to be expended within the schools of pharmacy. Increasing numbers of highly trained personnel will be required by government, industry and the schools themselves. From a Canadian point of view, it would also be highly desirable for the pharmaceutical industry to utilize the talents, as much as possible and practicable, of such highly skilled Canadians within expanded programmes of research and product development within this country.

11. The people of Canada are utilizing more and more prescription medication. Prescription utilization per capita has followed a rising trend over the last decade. This has led to a higher degree of utilization of the professional talents and time of the retail pharmacist and the expanding sales of the pharmaceutical industry have necessitated augmented professional staffs and better utilization of those who are so employed. The general acceptance by a large proportion of the population of a prepayment or insurance plan for the provision of prescription services, whether administered by a government or private insuring agency, would precipitate a substantial increase in prescription utilization. Under such conditions, the current inadequacy of pharmacists in hospital and industry would be magnified. At the same time, the concept of adequate level of pharmacist manpower in the retail branch of the profession would have to be increased, and it is likely that the current number of retail practitioners, considered as somewhat more than adequate to meet the needs of the public at present, would, under a plan of this nature, prove just adequate or even inadequate.

12. This study has been hampered throughout by lack of statistical data on pharmacists available from the Dominion Bureau of Statistics. The study, and subsequent ones if they are to be attempted, would have been aided immeasurably by the availability of statistics on census, immigration and mortality of pharmacists. Since these data are available on many, if not most, professions, and since pharmacists play a vital role in the health of the nation which renders constant consideration of these factors important, it would seem advisable that such statistics be recorded for pharmacists as a group.

APPENDICES

APPENDIX A

ROYAL COMMISSION ON HEALTH SERVICES

"PHARMACIST MANPOWER STUDY"

TO: THE HOSPITAL CHIEF PHARMACIST

(PLEASE PRINT CLEARLY)

A. HOSPITAL: .....

ADDRESS: .....

.....

B. List of *all* hospital personnel having a degree in pharmacy:

	Name	Degree(s)	University Granting Degree(s)	If Employed by hospital part-time — check here.
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

C. Your estimates please, of the number of pharmacists required to fill vacancies in your staff and for normal replacement of retiring pharmacists. Such estimates should also take into account anticipated expansion of your hospital.

1. At present .....
2. In next year .....
3. In next five years .....
4. In next ten years .....

Please return this form, when completed, to:-

The Canadian Pharmaceutical Association, Inc.,
221 Victoria Street,
TORONTO 2, Ontario.

For your convenience, the enclosed postage-free envelope may be used.

COMMISSION ROYALE D'ENQUÊTE SUR LES SERVICES DE SANTÉ

"ÉTUDE SUR L'EFFECTIF DES PHARMACIENS"

AU PHARMACIEN OU A LA PHARMACIENNE EN CHEF DE L'HÔPITAL

(PRIÈRE D'ÉCRIRE EN LETTRES MOULÉES)

A. HÔPITAL: .....

ADRESSE: .....

.....

B. Liste de *tout* le personnel de l'hôpital qui détient un degré en pharmacie:

Nom	Degré(s)	Université qui a décerné le degré ou les degrés.	Si employé à temps partiel par l'hôpital, pointer ici.
1.			
2.			
3.			
4.			
5.			
6.			

C. Selon vous, combien de pharmaciens faudra-t-il pour combler les vacances au sein de votre personnel et pour remplacer normalement ceux qui prendront leur retraite? De telles estimations devraient également tenir compte de l'expansion future de votre hôpital.

1. Actuellement .....
2. L'an prochain .....
3. Au cours des cinq prochaines années .....
4. Au cours des dix prochaines années .....

Prière de retourner cette formule remplie à:

Le secrétaire
Commission royale d'enquête sur les services de santé
C.P. 1173
OTTAWA, Canada.

Vous pouvez vous servir de l'enveloppe affranchie ci-jointe.

RESPONSE TO THE HOSPITAL SURVEY FOR
THE IDENTIFICATION OF EMPLOYED PHARMACISTS

Province	Number of Hospitals to Which Survey Was Directed[1]	Total Number of Replies	Replies Stating No Pharmacist Employed	Number of Pharmacists Employed in Replying Hospitals
British Columbia	26	26	1	53
Alberta	21	21	2	42
Saskatchewan	20	20	0	49
Manitoba	15	15	0	41
Ontario	99	97	6	216
Quebec	102	70	15	122
New Brunswick	10	10	3	10
Nova Scotia	16	16	3	22
Prince Edward Island	2	2	2	0
Newfoundland	3	3	2	3
Yukon and N.W.T.	2	2	0	3
TOTAL	316	282	34	561

Total pharmacists employed in 248 (282 – 34) hospitals	561
Plus chief pharmacists of 34 hospitals not returning forms	34
Total mailing list – hospital pharmacists	595

[1]Hospitals identified as employing at least one pharmacist by the Canadian Hospital Association.

APPENDIX B

ROYAL COMMISSION ON HEALTH SERVICES

QUESTIONNAIRE TO PHARMACISTS IN CANADA
(Disregard bracketed numbers to the RIGHT of each question)

PART A

(1) Age last birthday
1. Under 20 years
2. 20 to 25 years
3. 26 to 30 years
4. 31 to 35 years
5. 36 to 40 years
6. 41 to 45 years
7. 46 to 50 years
8. 51 to 55 years
9. 56 to 60 years
0. 61 to 65 years
x. 66 to 70 years
y. Over 70 years (1)

(2) Sex 1. Male 2. Female (2)

(3) Marital status
1. Single
2. Married
3. Engaged
4. Divorced, separated, or widowed (3)

(4) Birthplace

CANADA

01 British Columbia
02 Alberta
03 Saskatchewan
04 Manitoba
05 Ontario
06 Quebec
07 New Brunswick
08 Nova Scotia
09 Prince Edward Island
10 Newfoundland
11 Yukon or N.W.T.

FOREIGN

12 U.S.A.
13 Great Britain
14 Other European
15 Other Non-European (4–5)

(5) If foreign born and educated in Pharmacy prior to entering Canada, years of residence in Canada

1. Less than 5 years
2. 6 to 10 years
3. 11 to 15 years
4. 16 to 20 years
5. 21 to 25 years
6. Over 25 years (6)

(6a) Site of residence immediately prior to receipt of initial formal training in pharmacy

CANADA

01 British Columbia
02 Alberta
03 Saskatchewan
04 Manitoba
05 Ontario
06 Quebec
07 New Brunswick
08 Nova Scotia
09 Prince Edward Island
10 Newfoundland
11 Yukon or N.W.T.

FOREIGN

12 U.S.A.
13 Great Britain
14 Other European
15 Other Non-European (7–8)

(6b) Size of community at that time

1. village, farm or rural district
2. town with population of 5,000 or less
3. city of 5,000 to 25,000
4. city of 25,000 to 50,000
5. city of 50,000 to 100,000
6. city of 100,000 to 200,000
7. city of over 200,000 (9)

(7) Do you currently hold an undergraduate university degree in Pharmacy?

1. Yes 2. No (10)

(8a) Do you currently hold any Bachelors degree other than first undergraduate degree in Pharmacy?

1. Yes 2. No (11)

(8b) Do you currently hold an M.D.?

1. Yes 2. No (12)

(8c) Do you currently hold any Masters Degrees (M.Sc.; M.A.; M.B.A.; etc.)?

1. Yes 2. No (13)

(8d) Do you currently hold a Doctorate (Ph.D.; D.Sc.; etc.)?

1. Yes 2. No (14)

(9a) Do you currently hold either a licence from a provincial licensing body to practice Pharmacy in a province of Canada?

OR

a non-practicing registration with a provincial licensing body?

1. Yes 2. No (15)

(9b) Regardless of your present status, have you ever been licensed in a province of Canada to practice Pharmacy?

1. Yes 2. No (16)

(10) How long has it been since you received your undergraduate degree (or licence if granted without degree) which enabled you to practice Pharmacy in Canada?

1. Less than 5 years
2. 6 to 10 years
3. 11 to 15 years
4. 16 to 20 years
5. 21 to 25 years
6. 26 to 30 years
7. 31 to 35 years
8. 36 to 40 years
9. 41 to 45 years
0. Over 45 years (17)

(11a) Site of Present Employment

1. British Columbia
2. Alberta
3. Saskatchewan
4. Manitoba
5. Ontario
6. Quebec
7. New Brunswick
8. Nova Scotia
9. Prince Edward Island
0. Newfoundland
x. Yukon or N.W.T. (18)

(11b) Size of community

1. village, farm or rural district
2. town with population of 5,000 or less
3. city of 5,000 to 25,000
4. city of 25,000 to 50,000
5. city of 50,000 to 100,000
6. city of 100,000 to 200,000
7. city of over 200,000 (19)

(11c) In which type of district is this establishment situated?

1. Downtown commercial district
2. Semi-residential district or Urban shopping centre
3. Residential district or Suburban shopping centre (20)

(12a) Is the present location of your employment in the same city, town or rural area in which you resided before entering the profession of Pharmacy

1. Yes 2. No (21)

(12b) If your answer to Part (a) is "No" please circle the factor which influenced you most in choosing your present location

1. More opportunities in present location
2. Preference for city practice
3. Preference for rural practice
4. Location dictated by employer
5. Other (specify) (22)

(13) Nature of Present Employment (circle one only which most closely corresponds)

RETAIL PHARMACY:

01 Owner and Manager
02 Owner only
03 Manager only
04 Employee Pharmacist

INSTITUTIONAL PHARMACY:
Hospital Pharmacy

05 Administration
06 Chief Pharmacist
07 Employee Pharmacist

University Faculty

08 Administration
09 Teaching
10 Research

Government Service

11 Armed Services
12 Research
13 Administration

MANUFACTURING PHARMACY:

14 Research
15 Administration
16 Production
17 Sales

PHARMACY ORGANIZATIONS

18 Administration
19 Inspection and enforcement
20 Publications

21 RETIRED

22 OUTSIDE PROFESSION (23–24)

(14) What factor influenced you most in the choice of your present field of activity within Pharmacy?

1. Income expected
2. Security
3. Hours of work
4. Conditions of work
5. Personal aptitudes
6. Financial resources
7. Professional responsibility
8. Independence (own employer) (25)

(15) What was your approximate total income from all sources in 1961?

1. Less than $2,000.
2. $2,000 to $4,000.
3. $4,000 to $6,000.
4. $6,000 to $8,000.
5. $8,000 to $10,000.
6. $10,000 to $15,000.
7. $15,000 to $20,000.
8. $20,000 to $30,000.
9. $30,000 to $40,000.
0. $40,000 to $50,000.
x. $50,000 to $75,000.
y. Over $75,000. (26–27)

(16) In how many years do you plan (or expect to be able) to retire from active practice?

1. Less than 5 years
2. 5 to 10 years
3. 11 to 15 years
4. 16 to 20 years
5. 21 to 30 years
6. 31 to 40 years
7. Over 40 years (28)

*(17a) Site of first employment in Canada since graduation or original licence (Do not count apprenticeship please)

1. British Columbia
2. Alberta
3. Saskatchewan
4. Manitoba
5. Ontario
6. Quebec
7. New Brunswick
8. Nova Scotia
9. Prince Edward Island
0. Newfoundland
x. Yukon or N.W.T. (29)

(17b) Size of community

1. village, farm or rural district
2. town with population of 5,000 or less
3. city of 5,000 to 25,000
4. city of 25,000 to 50,000
5. city of 50,000 to 100,000
6. city of 100,000 to 200,000
7. city of over 200,000 (30)

(18a) Was the site of this first employment in the same city, town or rural area in which you resided before entering the profession of Pharmacy?

1. Yes 2. No (31)

(18b) If your answer to Part (a) above is "No" please circle the factor which influenced you most in choosing the location of your first employment

1. More opportunities in that location
2. Preference for city practice
3. Preference for rural practice
4. Location dictated by employer
5. Other (specify) (32)

(19) Nature of first employment in Pharmacy

1. Retail Pharmacy
2. Hospital Pharmacy
3. University Faculty
4. Government Service
5. Armed Services
6. Manufacturing Pharmacy
7. Pharmacy Organization
8. Outside of Profession (33)

(20) What factor influenced you most in the choice of your first field of activity within Pharmacy?

1. Income expected
2. Security
3. Hours of work
4. Conditions of work
5. Personal aptitudes
6. Limited financial resources
7. Professional responsibilities
8. Independence (own employer) (34)

(21a) In how many provinces of Canada have you practiced Pharmacy in any of its fields?

1. One 6. Six
2. Two 7. Seven
3. Three 8. Eight
4. Four 9. Nine
5. Five 0. Ten (35)

(21b) In how many different cities, towns or rural areas have you practiced Pharmacy in any of its fields?

1. One only 4. Six to Ten
2. Two 5. More than Ten
3. Three to Five (36)

(22) In how many fields of Pharmacy (as outlined in Question 19) have you been engaged during your career?

1. One 5. Five
2. Two 6. Six
3. Three 7. More than Six
4. Four (37)

(23) For how many separate employers have you worked since obtaining status as a Pharmacist? (If self-employed at any time, count yourself as one employer)

1. One 5. Five
2. Two 6. Six
3. Three 7. Seven to Ten
4. Four 8. Over Ten (38)

(24) Every profession consists of a variety of tasks or activities and it is conceivable that a university training is required for the adequate performance of some tasks more than it is for others. Broadly speaking, in your opinion, how necessary is a university training for the performance of each of the following tasks? Answer by circling the NUMBER of the statement which best describes your opinion.

University training is:

"1" – Very necessary
"2" – Fairly necessary
"3" – Useful but not necessary
"4" – Neither useful or necessary for:

(24A) Filling Prescriptions (including filing, packaging, recording, labelling, etc.)

1 3
2 4 (39)

This question continued on next page

* NOTE: If you have continuously been employed in the same geographical area and in the same field of Pharmacy since graduation or original licence, you may omit answering questions 17 to 20.

(24B) Retail selling of non-prescription medicinals including "front shop" medicinals (cough medicines, stomach preparations, etc.) and medical supplies (bandages, syringes, hot water bottles, etc.)

1 3
2 4 (40)

(24C) Retail selling of non-medicinals (cosmetics, newspapers and magazines, toys, ornaments, gifts, toiletries, etc.)

1 3
2 4 (41)

(24D) Management of personnel (including supervision and training of apprentices, clerks, delivery boys, other pharmacists and technical staff)

1 3
2 4 (42)

(24E) Management of cash (including daily reports, deposits, change, records, bookkeeping, payrolls, etc.)

1 3
2 4 (43)

(24F) Management of "front store" stock (including ordering, storage, want book, inventories, buying, sales promotions, etc.)

1 3
2 4 (44)

(24G) Management of dispensary stock (including ordering, storage, inventories, maintenance, price book, etc.)

1 3
2 4 (45)

(24H) Accumulation of information regarding new developments in pharmaceutical and medicinal products, methods, etc., and including such tasks as the filing of product information, reading literature, meeting pharmaceutical representatives, taking refresher courses, etc.)

1 3
2 4 (46)

(24I) Providing information and advice regarding drugs and health problems to the public, the doctor and other members of the health professions

1 3
2 4 (47)

(24J) Research, product development and manufacturing of pharmaceuticals on individual or large scale basis

1 3
2 4 (48)

(24K) Operating various agencies for other business establishments, organizations, and/or local or federal government (e.g., post office, electric and telephone bill collections, telegrams, etc.)

1 3
2 4 (49)

(24L) Other (Please specify (50))

1 3
2 4 (51)

(25) It is often said that a pharmacist is engaged in many different tasks or activities. We are interested in knowing how YOU personally distribute your time as a pharmacist. Answer by placing in the blanks preceding the tasks listed below, the AVERAGE PERCENTAGE of the time spent by you in each. (Please remember, the total should equal 100%)

NOTE: We realize that some of the tasks are performed simultaneously and that it will be difficult for you to accurately separate them according to time and effort involved in each case. We also realize that the task areas are fairly broad distinctions and do not represent a complete break-down of the many phases of the daily work of a pharmacist. But, since this is the first study of its kind, it is desirable to have only a general estimate of the distribution of the pharmacist's time. Please bear with us and do the best you can.

% time spent in:

(25A) Filling Prescriptions (including filing, packaging, recording, labelling, etc.) ..... (52–53)

(25B) Retail selling of non-prescription medicinals including "front shop" medicinals (cough medicines, stomach preparations, etc.) and medical supplies (bandages, syringes, hot water bottles, etc.) ..... (54–55)

(25C) Retail selling of non-medicinals (cosmetics, newspapers and magazines, toys, ornaments, gifts, toiletries, etc.) ..... (56–57)

(25D) Management of personnel (including supervision and training of apprentices, clerks, delivery boys, other pharmacists and technical staff) ..... (58–59)

(25E) Management of cash (including daily reports, deposits, change, records, bookkeeping, payrolls, etc.) ..... (60–61)

(25F) Management of "front store" stock (including ordering, storage, want book, inventories, buying, sales promotions, etc.) ..... (62–63)

This question continued on next page

(25G) Management of dispensary stock (including ordering, storage, inventories, maintenance, price book, etc.)
..... (64–65)

(25H) Accumulation of information regarding new developments in pharmaceutical and medicinal products, methods, etc., and including such tasks as the filing of product information, reading literature, meeting pharmaceutical representatives, taking refresher courses, etc.
..... (66–67)

(25 I) Providing information and advice regarding drugs and health problems to the public, the doctor and other members of the health professions.
..... (68–69)

(25J) Research, product development and manufacturing of pharmaceuticals on individual or large scale basis.
..... (70–71)

(25K) Operating various agencies for other business establishments, organizations, and/or local or federal governments (e.g., acceptance of electric and telephone bills, operating a post office and telegram service, etc.)
..... (72–73)

(25L) Other (Please specify (74))
..... (75–76)
Total 100%

PART B is to be completed by retail pharmacy managers, hospital chief pharmacists and others in direct supervision of facilities dispensing prescriptions only. Part B should be completed by one pharmacist per dispensary only.

(26) Type of Pharmacy
1. Retail 2. Hospital (77)

(27) Please estimate the total annual sales volume of the establishment in which you work. If direct sales are not made, such as in the armed services and in some hospital pharmacies, please estimate, as accurately as possible, the market value of the drugs and other commodities distributed annually by this establishment.

1. below $50,000
2. more than $50,000 but less than $100,000
3. more than $100,000 but less than $150,000
4. more than $150,000 but less than $200,000
5. more than 200,000 (78)

(28) What percentage of the total sales volume of the establishment in which you work is derived from prescription sales?

1. less than 10%
2. 10% or more but less than 20%
3. 20% or more but less than 30%
4. 30% or more but less than 40%
5. 40% or more but less than 50%
6. 50% or more but less than 60%
7. 60% or more but less than 70%
8. 70% or more but less than 80%
9. 80% or more (79)

(29) Number of prescriptions filled annually in your pharmacy – include both new and repeat prescriptions.
..... (80–84)

(30) Total number of Pharmacists employed by your hospital pharmacy or retail store (include yourself)
..... (85–86)

(31) Total weekly hours worked by pharmacists (please add number of hours worked by each pharmacist together and enter total of all pharmacists hours per week in this space)
..... (87–88)

(32) If pharmacists were available, how many more (if any) would you hire?
.....
(on same salary basis as presently employed pharmacists or on basis of salaries paid to employed pharmacists in your area) (89–90)

COMMISSION ROYALE SUR LES SERVICES DE SANTÉ
QUESTIONNAIRE DESTINÉ AUX PHARMACIENS DU CANADA

(Ne tenez pas compte des nombres entre parenthèses, placés À DROITE de chaque question)

PARTIE A

(1) Age au dernier anniversaire
1 — Moins de 20 ans
2 — Entre 20 et 25 ans
3 — Entre 26 et 30 ans
4 — Entre 31 et 35 ans
5 — Entre 36 et 40 ans
6 — Entre 41 et 45 ans
7 — Entre 46 et 50 ans
8 — Entre 51 et 55 ans
9 — Entre 56 et 60 ans
0 — Entre 61 et 65 ans
x — Entre 66 et 70 ans
y — Plus de 70 ans (1)

(2) Sex 1 — masculin 2 — féminin (2)

(3) État civil
1 — Célibataire
2 — Marié
3 — Fiancé(e)
4 — Divorcé(e), séparé(e), veuf ou veuve (3)

(4) Lieu de naissance

CANADA
01 — Colombie-Britannique
02 — Alberta
03 — Saskatchewan
04 — Manitoba
05 — Ontario
06 — Québec
07 — Nouveau-Brunswick
08 — Nouvelle-Écosse
09 — Île du Prince-Édouard
10 — Terre-Neuve
11 — Yukon ou Territoires du Nord-Ouest

PAYS ÉTRANGERS
12 — États-Unis d'Amérique
13 — Grande-Bretagne
14 — Autres pays d'Europe
15 — Autres pays en dehors de l'Europe (4–5)

(5) Dans le cas où le correspondant est né à l'étranger et a fait son cours de pharmacien avant d'entrer au Canada, nombre d'années de résidence au Canada:
1 — Moins de 5 ans
2 — De 6 à 10 ans
3 — De 11 à 15 ans
4 — De 16 à 20 ans
5 — De 21 à 25 ans
6 — Plus de 25 ans (6)

(6a) Lieu de résidence immédiatement avant d'entrer à la faculté de pharmacie

CANADA
01 — Colombie-Britannique
02 — Alberta
03 — Saskatchewan
04 — Manitoba
05 — Ontario
06 — Québec
07 — Nouveau-Brunswick
08 — Nouvelle-Écosse
09 — Île du Prince-Édouard
10 — Terre-Neuve
11 — Yukon ou Territoires du Nord-Ouest

PAYS ÉTRANGERS
12 — États-Unis d'Amérique
13 — Grande-Bretagne
14 — Autres pays d'Europe
15 — Autres pays en dehors de l'Europe (7–8)

(6b) Importance du lieu à l'époque susmentionnée
1 — Village, région agricole ou rurale
2 — Ville de 5,000 âmes ou moins
3 — Ville de 5,000 à 25,000 âmes
4 — Ville de 25,000 à 50,000 âmes
5 — Ville de 50,000 à 100,000 âmes
6 — Ville de 100,000 à 200,000 âmes
7 — Ville de plus de 200,000 âmes (9)

(7) Détenez-vous actuellement un diplôme en pharmacie obtenu dans une faculté universitaire?
1 — Oui 2 — Non (10)

(8a) Avez-vous obtenu un baccalauréat à part de votre diplôme en pharmacie?
1 — Oui 2 — Non (11)

(8b) Détenez-vous actuellement un diplôme en médecine?
1 — Oui 2 — Non (12)

(8c) Détenez-vous actuellement une licence ou maîtrise quelconque? (M.Sc., M.A., M.A.C., etc.)
1 — Oui 2 — Non (13)

(8d) Détenez-vous actuellement un doctorat? (D.Ph., D.Sc., etc.)
1 — Oui 2 — Non (14)

(9a) Détenez-vous actuellement un permis d'un organisme provincial autorisé à délivrer des permis, en vue d'exercer la pharmacie dans une des provinces du Canada?
OU
Vous êtes-vous inscrit à titre de non-pratiquant auprès d'un organisme provincial autorisé à délivrer des permis?
1 — oui 2 — non (15)

Cette question se termine à la p. suivante

(9b) Nonobstant votre situation actuelle, avez-vous déjà obtenu un permis pour exercer la pharmacie dans une des provinces du Canada?

1 — oui 2 — non (16)

(10) Combien d'années ce sont écoulés depuis que vous détenez le diplôme (ou le permis) qui vous permet d'exercer la pharmacie au Canada?

1 — Moins de 5 ans
2 — De 5 à 10 ans
3 — De 11 à 15 ans
4 — De 16 à 20 ans
5 — De 21 à 25 ans
6 — De 26 à 30 ans
7 — De 31 à 35 ans
8 — De 36 à 40 ans
9 — De 41 à 45 ans
0 — Plus de 45 ans (17)

(11a) Lieu de l'emploi actuel

1 — Colombie-Britannique
2 — Alberta
3 — Saskatchewan
4 — Manitoba
5 — Ontario
6 — Québec
7 — Nouveau-Brunswick
8 — Nouvelle-Écosse
9 — Île du Prince-Édouard
0 — Terre-Neuve
x — Yukon ou Territoires du Nord-Ouest (18)

(11b) Importance du lieu désigné ci-haut

1 — Village, région agricole ou rurale
2 — Ville de 5,000 âmes ou moins
3 — Ville de 5,000 à 25,000 âmes
4 — Ville de 25,000 à 50,000 âmes
5 — Ville de 50,000 à 100,000 âmes
6 — Ville de 100,000 à 200,000 âmes
7 — Ville de plus de 200,000 âmes (19)

(11c) Où se trouve situé cet établissement commercial?

1 — Dans un quartier commercial de ville
2 — Dans un quartier mi-bourgeois ou dans un centre commercial urbain
3 — Dans un quartier d'habitation (ou bourgeois) ou dans un centre commercial de banlieue (20)

(12a) Le lieu actuel de votre emploi se trouve-t-il dans la ville ou dans la région rurale où vous demeuriez avant d'exercer la profession de pharmacien?

1 — oui 2 — non (21)

(12b) Si vous avez répondu "non" à la partie (a), veuillez désigner d'un cercle le facteur ci-dessous qui vous a le plus influencé dans le choix du lieux où vous exercez votre profession actuellement?

1 — Les occasions favorables y sont plus nombreuses
2 — Je préfère exercer ma profession dans une ville
3 — Je préfère exercer ma profession dans un milieu rural
4 — L'endroit a été choisi par mon patron
5 — Autres facteurs (prière de préciser) (22)

(13) Nature de l'emploi actuel (désigner d'un cercle celui qui correspond le mieux à votre situation actuelle)

PHARMACIEN DÉTAILLANT

01 — Propriétaire et directeur
02 — Propriétaire seulement
03 — Directeur seulement
04 — Employé à titre de pharmacien

PHARMACIE AU SERVICE D'UNE INSTITUTION

Pharmacie appartenant à un hôpital

05 — Administration
06 — Pharmacien en chef
07 — Employé à titre de pharmacien

Faculté universitaire

08 — Administration
09 — Enseignement
10 — Recherches

AU SERVICE DU GOUVERNEMENT

11 — Services de l'armée
12 — Recherches
13 — Administration

FABRICATION

14 — Recherches
15 — Administration
16 — Production
17 — Ventes

ORGANISMES PHARMACEUTIQUES

18 — Administration
19 — Inspection et mise en vigueur
20 — Publications

21 — RETRAITÉ

22 — EN DEHORS DE LA PROFESSION (23–24)

(14) Quel facteur vous a le plus influencé dans le choix du domaine actuel de la profession où vous exercez votre activité?

1 — Le côté revenu
2 — La sécurité
3 — Les heures de travail
4 — Les conditions de travail
5 — Les aptitudes personnelles
6 — Les ressources financières
7 — La responsabilité professionnelle
8 — L'indépendance (établi à mon compte) (25)

(15) Quel a été le total approximatif de votre revenu (toutes sources comprises) en 1961?

1 — Moins de $2,000
2 — Entre $2,000 et $4,000
3 — Entre $4,000 et $6,000
4 — Entre $6,000 et $8,000

Cette question se termine à la p. suivante

5 — Entre $8,000 et $10,000
6 — Entre $10,000 et $15,000
7 — Entre $15,000 et $20,000
8 — Entre $20,000 et $30,000
9 — Entre $30,000 et $40,000
0 — Entre $40,000 et $50,000
x — Entre $50,000 et $75,000
y — Plus de $75,000 (26—27)

(16) Dans combien d'années comptez-vous (ou croyez-vous pouvoir) cesser d'exercer votre profession?

1 — Dans moins de 5 ans
2 — Dans 5 ou 10 ans
3 — Dans 11 ou 15 ans
4 — Dans 16 ou 20 ans
5 — Dans 21 ou 30 ans
6 — Dans 31 ou 40 ans
7 — Après plus de 40 ans (28)

NOTA: Dans le cas où vous auriez été employé au même endroit ou dans le cas où vous auriez exercé votre profession de pharmacien dans le même domaine depuis l'obtention de votre diplôme ou de votre premier permis, vous pouvez vous dispenser de répondre aux questions 17 à 20

(17a) Lieu de votre premier emploi au Canada depuis l'obtention de votre diplôme ou de votre premier permis (Prière de ne pas tenir compte de l'apprentissage)

1 — Colombie-Britannique
2 — Alberta
3 — Saskatchewan
4 — Manitoba
5 — Ontario
6 — Québec
7 — Nouveau-Brunswick
8 — Nouvelle-Écosse
9 — Île du Prince-Édouard
0 — Terre-Neuve
x — Yukon ou Territoires du Nord-Ouest (29)

(17b) Importance de l'endroit précité

1 — Village, région agricole ou rurale
2 — Ville de 5,000 âmes ou moins
3 — Ville de 5,000 à 25,000 âmes
4 — Ville de 25,000 à 50,000 âmes
5 — Ville de 50,000 à 100,000 âmes
6 — Ville de 100,000 à 200,000 âmes
7 — Ville de plus de 200,000 âmes (30)

(18a) Ce premier emploi se trouvait-il dans la ville ou dans la région rurale où vous demeuriez avant de devenir pharmacien?

1 — oui 2 — non (31)

(18b) Si vous avez répondu "non" à la partie (a), veuillez désigner d'un cercle le facteur ci-dessous qui vous a influencé le plus dans le choix du lieu de votre premier emploi

1 — Occasions favorables plus nombreuses
2 — Je préfère exercer ma profession dans une ville
3 — Je préfère exercer ma profession dans un milieu rural
4 — L'endroit a été choisi par le patron
5 — Autres facteurs (précisez) (32)

(19) Nature du premier emploi à titre de pharmacien

1 — Pharmacie de détail
2 — Pharmacie d'hôpital
3 — Faculté universitaire
4 — Au service du gouvernement
5 — Au service de l'armée
6 — Pharmacie de fabrication
7 — Organisme pharmaceutique
8 — En dehors de la profession (33)

(20) Quel facteur vous a influencé le plus dans le choix du premier domaine où vous avez exercer votre activité à titre de pharmacien?

1 — Le côté revenu
2 — La sécurité
3 — Les heures de travail
4 — Les conditions de travail
5 — Les aptitudes personnelles
6 — Limitation des moyens financiers
7 — Les responsabilités professionnelles
8 — L'indépendance (établi à mon compte) (34)

(21a) Dans combien de provinces du Canada avez-vous exercé la pharmacie, dans quelque domaine que ce soit?

1 — une 6 — six
2 — deux 7 — sept
3 — trois 8 — huit
4 — quatre 9 — neuf
5 — cinq 0 — dix (35)

(21b) Dans combien de villes ou de régions rurales avez-vous exercé la pharmacie, dans quelque domaine que ce soit?

1 — Une seulement 4 — De six à dix
2 — Deux 5 — Plus de dix
3 — De trois à cinq (36)

(22) Dans combien de domaines de la pharmacie (voir les domaines énumérés à la question 19) avez-vous travaillé au cours de votre carrière?

1 — un 5 — cinq
2 — deux 6 — six
3 — trois 7 — plus de six
4 — quatre (37)

(23) Pour combien de patrons avez-vous travaillé depuis que vous êtes pharmacien? (Si vous avez déjà été établi à votre compte, comptez-vous au nombre des employeurs.)

1 — un 5 — cinq
2 — deux 6 — six
3 — trois 7 — sept à dix
4 — quatre 8 — plus de dix (38)

(24) Toute profession comporte diverses tâches ou divers modes d'activité, et l'on conçoit

Cette question se termine à la p. suivante

facilement qu'une formation universitaire soit plus nécessaire dans certains cas que dans d'autres. Dans quelle mesure à votre avis, une formation universitaire est-elle généralement nécessaire pour accomplir chacune des tâches énumérées ci-dessous? Pour répondre à cette question entourez d'un cercle, aux numéros suivants, le chiffre qui correspond ci-dessous à la réponse que vous avez choisie.

La formation universitaire:

"1" – très nécessaire
"2" – passablement nécessaire
"3" – utile mais non nécessaire
"4" – ni utile ni nécessaire
à l'accomplissement des tâches suivantes

(24A) L'exécution des ordonnances (y compris le classement, l'empaquetage, l'inscription au registre, l'étiquetage, etc.)

1 3
2 4 (39)

(24B) La vente au détail des médicaments qui n'exigent pas d'ordonnances, y compris les médicaments d'usage courant (remèdes contre le rhume, digestifs, etc.) et les produits médicaux (bandes de pansement, seringues, bouillottes, etc.)

1 3
2 4 (40)

(24C) La vente au détail des produits non médicinaux (cosmétiques, journaux et revues, jouets, ornements, nouveautés, articles de toilette, etc.)

1 3
2 4 (41)

(24D) L'administration du personnel (y compris la surveillance et la formation des apprentis, des commis, des livreurs, des autres pharmaciens et des techniciens)

1 3
2 4 (42)

(24E) L'administration de la caisse (y compris les rapports quotidiens, les dépôts, la monnaie, les inscriptions au registre, la tenue des livres, les feuilles de paie, etc.)

1 3
2 4 (43)

(24F) La gestion des stocks de médicaments qui n'exigent pas d'ordonnances (y compris les commandes, l'entreposage, le registre des articles à commander, l'inventaire des stocks, les achats, la stimulation des ventes, etc.)

1 3
2 4 (44)

(24G) L'administration des stocks d'officine (y compris les commandes, l'entreposage, l'inventaire des stocks, l'entretien, le catalogue des prix, etc.)

1 3
2 4 (45)

(24H) Le recueil des renseignements concernant les nouvelles applications des produits pharmaceutiques et médicinaux, les méthodes, etc., y compris le classement des renseignements sur les divers produits, les feuillets publicitaires, les rendez-vous avec les représentants des compagnies de produits pharmaceutiques, l'inscription aux cours de perfectionnement, etc.)

1 3
2 4 (46)

(24I) Les renseignements et les conseils, relatifs aux produits pharmaceutiques et aux questions de santé, à mettre à la disposition du public, des médecins et des autres représentants des services de santé

1 3
2 4 (47)

(24J) Les travaux de recherches, la mise en valeur des produits et la fabrication des produits pharmaceutiques à l'intention de particuliers ou sur une grande échelle

1 3
2 4 (48)

(24K) L'exploitation de diverses agences pour le compte d'autres établissements commerciaux, d'organismes et (ou) du gouvernement municipal ou fédéral (par ex. bureau de poste, perception des comptes d'électricité et de téléphone, télégrammes, etc.)

1 3
2 4 (49)

(24L) Autres tâches (précisez)

(50)

1 3
2 4 (51)

(25) On dit souvent que le pharmacien accomplit de nombreuses tâches ou exerce son activité de diverses façons. Nous aimerions à savoir comment vous employez votre temps dans l'exercice de votre profession de pharmacien. Veuillez répondre en insérant dans les blancs qui accompagnent la description des tâches énumérées ci-dessous la MOYENNE POUR CENT du temps que vous accordez à chacune de ces tâches. (Rappelez-vous que le total doit être de 100 p. 100.)

REMARQUE:

Nous savons qu'il y a des tâches que vous accomplissez en même temps et qu'il vous sera difficile de faire le partage du temps et du travail que vous accordez dans chaque cas. Nous nous rendons compte, en outre, que les tâches énumérées représentent des distinctions assez vastes et qu'elles ne constituent pas un exposé complet des diverses étapes de la journée du pharmacien. Mais comme il s'agit ici de la première

Cette question se termine à la p. suivante

étude du genre, nous voudrions tout simplement avoir une idée de la façon dont le pharmacien organise l'emploi de son temps. Aussi, nous vous prions d'être indulgents et de répondre de la meilleure façon possible.

Le pourcentage de temps employé:

(25A) À l'exécution des ordonnances (y compris le classement, l'empaquetage, l'inscriptio au registre, l'étiquetage, etc.)

..... (52–53)

(25B) À la vente au détail des médicaments qui n'exigent pas d'ordonnances, y compris les médicaments d'usage courant (remèdes contre le rhume, digestifs, etc.) et les produits médicaux (bandes de pansements, seringues, bouillottes, etc.)

..... (54–55)

(25C) À la vente au détail des produits non-médicinaux (cosmétiques, journaux et revues, jouets, ornements, nouveautés, articles de toilette, etc.)

..... (56–57)

(25D) À l'administration du personnel (y compris la surveillance et la formation des apprentis, des commis, des livreurs, des autres pharmaciens et des techniciens)

..... (58–59)

(25E) À l'administration de la caisse (y compris les rapports quotidiens, les dépôts, la monnaie, les inscriptions au registre, la tenue des livres, les feuilles de paie, etc.)

..... (60–61)

(25F) À la gestion des stocks de médicaments qui n'exigent pas d'ordonnances (y compris les commandes, l'entreposage, le registre des articles à commander, l'inventaire des stocks, la stimulation des ventes, etc.)

..... (62–63)

(25G) À la gestion des stocks d'officine (y compris les commandes, l'entreposage, l'inventaire des stocks, l'entretien, le catalogue des prix, etc.)

..... (64–65)

(25H) Au recueil de renseignements concernant les nouvelles applications des produits pharmaceutiques et des produits médicinaux, aux méthodes, etc., y compris le classement des renseignements sur les divers produits, les feuillets publicitaires, les rendez-vous avec les représentants des compagnies de produits pharmaceutiques, l'inscription aux cours de perfectionnement, etc.)

..... (66–67)

(25I) À mettre à la disposition du public, des médecins et des autres représentants des services de santé les renseignements et les conseils nécessaires relativement aux produits pharmaceutiques et aux questions de santé.

..... (68–69)

(25J) Aux travaux de recherches, à la mise en valeur des produits et à la fabrication des produits pharmaceutiques à l'intention de particuliers ou sur une grande échelle.

..... (70–71)

(25K) À l'exploitation de diverses agences pour le compte d'autres établissements commerciaux, d'organismes et (ou) d'un gouvernement municipal ou du gouvernement fédéral (par ex. la perception des comptes d'électricité et de téléphone, l'exploitation d'un bureau de poste, d'un service télégraphique, etc.)

..... (72–73)

(25L) Autres tâches (précisez)

(74)

..... (75–76)

Total 100 p. 100

La Partie B doit être remplie par les directeurs des pharmacies de détail, les pharmaciens en chef des hôpitaux et les pharmaciens qui surveillent les établissements qui s'occupent exclusivement de l'exécution des ordonnances. Un pharmacien seulement, par officine, devra remplir la Partie B.

(26) Genre de pharmacie

1 – De détail 2 – D'hôpital (77)

(27) Veuillez calculer approximativement le total annuel des ventes de l'établissement où vous travaillez. S'il ne s'agit pas de ventes directes, comme dans le cas des pharmacies de l'armée ou des pharmacies d'hôpitaux, veuillez estimer, aussi exactement que possible, la valeur marchande des produits pharmaceutiques et des autres produits dispensés chaque année par le dit établissement.

1 – moins de $50,000
2 – plus de $50,000 mais moins de $100,000
3 – plus de $100,000 mais moins de $150,000
4 – plus de $150,000 mais moins de $200,000
5 – plus de $200,000 (78)

(28) Quel pourcentage du total des ventes de l'établissement où vous travaillez provient de la vente des produits comportant une ordonnance?

1 – moins de 10 p. 100
2 – 10 p. 100 ou plus ou moins de 20 p. 100
3 – 20 p. 100 ou plus ou moins de 30 p. 100
4 – 30 p. 100 ou plus ou moins de 40 p. 100
5 – 40 p. 100 ou plus ou moins de 50 p. 100
6 – 50 p. 100 ou plus ou moins de 60 p. 100
7 – 60 p. 100 ou plus ou moins de 70 p. 100
8 – 70 p. 100 ou plus ou moins de 80 p. 100
9 – 80 p. 100 ou plus (79)

(29) Nombre d'ordonnances exécutées chaque année dans votre pharmacie; inclure les nouvelles ordonnances et les ordonnances répétées.

..... (80–84)

(30) Nombre de pharmaciens employés dans votre pharmacie d'hôpital ou dans votre établissement de détail (prière de vous inclure dans ce nombre)

..... (85–86)

(31) Total des heures de travail hebdomadaires des pharmaciens (prière d'ajouter le nombre des heures de travail de chacun des pharmaciens et le total des heures de travail hebdomadaires de tous les pharmaciens de l'établissement)

..... (87–88)

(32) S'il y avait des pharmaciens en disponibilité et si vous désiriez en employer combien en ajouteriez-vous à votre établissement?

.....

(au même salaire que ceux qui sont employés actuellement ou au salaire versé aux pharmaciens employés dans votre région). (89–90)

SEX AND AGE DISTRIBUTION OF RESPONDENTS TO THE PHARMACIST SURVEY, BY PROVINCE, 1962

Years of Age	Sex	B.C.	Alberta	Sask.	Manitoba	Ontario	Quebec	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada Total
Under 20	M	0	0	0	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	1	0	0	0	0	1
	N/S	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to 25	M	22	27	24	8	51	7	2	3	1	5	1	3	154
	F	15	33	14	4	19	3	1	5	0	0	0	6	100
	N/S	0	1	0	0	3	0	0	0	0	0	0	0	4
26 to 30	M	60	69	40	46	150	85	7	16	2	4	0	3	482
	F	14	11	2	2	38	3	0	1	0	0	0	10	83
	N/S	2	0	1	3	2	2	0	1	0	0	0	0	11
31 to 35	M	89	80	55	50	241	201	13	24	1	7	0	1	762
	F	12	5	9	0	49	12	0	2	0	0	0	6	95
	N/S	1	0	1	1	11	10	0	1	0	0	0	0	25
36 to 40	M	77	63	36	45	310	134	12	27	2	1	0	3	710
	F	11	12	2	3	37	4	0	3	0	0	0	5	77
	N/S	0	0	3	2	16	7	0	0	0	0	0	0	28
41 to 45	M	78	57	33	47	300	79	7	18	0	7	1	1	628
	F	7	1	4	2	17	4	0	3	0	1	0	3	42
	N/S	5	4	2	2	18	5	0	0	0	0	0	0	36
46 to 50	M	72	51	32	48	287	40	11	11	1	1	2	1	557
	F	7	3	0	3	9	9	0	2	0	0	0	1	34
	N/S	15	4	4	6	25	6	0	5	1	0	0	0	66
51 to 55	M	56	34	31	29	243	55	9	9	1	2	0	7	476
	F	0	3	5	0	17	3	0	0	2	1	0	0	31
	N/S	5	2	3	5	45	3	0	1	1	0	0	2	67
56 to 60	M	34	22	21	19	217	42	6	12	1	0	0	4	378
	F	5	0	1	1	6	3	3	0	0	0	0	3	22
	N/S	8	5	5	5	47	11	1	3	1	1	0	0	87
61 to 65	M	22	9	15	8	154	42	6	13	0	0	0	6	275
	F	1	2	1	0	10	2	1	0	1	0	0	0	18
	N/S	9	4	5	6	26	9	2	2	0	0	0	2	65
66 to 70	M	16	6	8	9	64	17	2	5	0	0	0	6	133
	F	2	1	0	0	0	0	0	0	0	0	0	0	3
	N/S	3	2	5	2	22	4	0	1	0	0	0	5	44
Over 70	M	19	8	5	6	56	7	4	3	0	3	0	8	119
	F	0	1	1	0	2	0	0	0	0	0	0	0	4
	N/S	3	3	1	2	18	2	1	1	0	0	0	7	38
Not Stated	M	4	2	0	0	3	0	1	0	0	0	0	0	10
	F	0	0	1	0	1	1	0	0	0	0	0	0	3
	N/S	0	0	0	0	2	0	1	0	0	0	0	1	4
Totals	M	549	428	300	315	2,076	709	80	141	9	30	4	43	4,684
	F	74	72	40	17	205	44	5	17	3	2	0	34	513
	N/S	51	25	30	34	235	59	5	15	3	1	0	17	475
Grand Totals		674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

PROFESSIONAL DISTRIBUTION OF RESPONDENTS TO THE PHARMACIST SURVEY, BY PROVINCE, 1962

Field of Employment	B.C.	Alberta	Sask.	Manitoba	Ontario	Quebec	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada Total
Retail													
Owner & Man.	260	232	193	189	1,191	327	47	100	7	16	0	3	2,565
Owner only	15	10	5	9	99	154	2	3	0	0	0	1	298
Manager only	76	73	34	25	327	37	13	25	2	7	0	0	619
Employee	224	134	57	77	423	88	9	11	2	5	1	1	1,032
Hospital													
Administration	1	2	1	0	6	2	1	0	0	0	1	0	14
Chief	17	13	15	10	82	29	3	14	2	1	2	0	188
Employee	19	14	21	15	69	34	3	5	1	2	0	1	184
University													
Administration	1	2	1	1	3	3	0	0	0	0	0	0	11
Teaching	8	3	3	4	6	7	0	2	0	0	0	1	34
Research	1	4	2	3	4	1	0	0	0	0	0	0	15
Government													
Armed Forces	5	7	2	4	21	4	2	3	0	0	0	2	50
Research	0	0	0	0	1	0	0	0	0	0	0	0	1
Administration	2	1	4	2	10	3	1	1	0	0	0	0	24
Manufacturing													
Research	1	0	0	0	9	11	0	0	0	0	0	1	22
Administration	3	1	0	1	36	25	0	0	0	0	0	0	66
Production	2	0	0	1	32	20	0	0	0	0	0	0	55
Sales	22	19	17	18	121	55	6	5	1	0	0	0	264
Pharmacy Orgs.													
Administration	2	1	1	0	5	0	0	0	0	0	0	0	9
Inspection	1	0	0	0	3	0	0	1	0	0	0	0	5
Publications	0	0	0	0	0	0	0	0	0	0	0	0	0
Retired	3	2	4	0	19	3	0	0	0	0	0	28	59
Employed outside Profession	8	0	6	2	22	5	1	1	0	0	0	9	54
Not Stated	3	7	4	5	27	4	2	2	0	2	0	47	103
Totals	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672

DISTRIBUTION OF PHARMACISTS BY SIZE OF LOCALITY OF PRACTICE, 1962

Size of Locality of Practice	B.C.	Alberta	Sask.	Manitoba	Ontario	Quebec	N.B.	N.S.	P.E.I.	Nfld.	Yukon and N.W.T.	Not Stated	Canada Total
Village, Farm or Rural	67	31	35	29	149	21	6	19	1	2	0	2	362
Town, Population Less Than 5,000	56	114	106	54	224	37	20	37	4	7	2	1	662
City, Population 5,000 to 25,000	135	32	47	32	369	133	22	37	9	6	2	1	825
City, Population 25,000 to 50,000	40	31	21	22	285	82	14	18	0	2	0	1	516
City, Population 50,000 to 100,000	42	4	46	0	192	51	23	30	0	16	0	0	404
City, Population 100,000 to 200,000	53	16	109	2	185	17	0	27	0	0	0	0	409
City, Population Over 200,000	273	294	2	223	1,089	453	0	0	0	0	0	6	2,340
Not Stated	8	3	4	4	23	18	5	5	1	0	0	83	154
Totals	674	525	370	366	2,516	812	90	173	15	33	4	94	5,672